

The Poetics of Science

Intertextual and Metatextual Themes in Ovid's Depiction
of Cosmic and Human Origins

By

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Preface

This work explores ancient views of cosmogony and the material structure of the universe in Ovid's *Metamorphoses*. In particular it focuses on the way in which Ovid problematizes how we define myth and poetry versus science and philosophy. It examines how Ovid generates a parallel between the form and content of the text in order to depict a world where abstract scientific principles can become personified deities. This work will seek to reevaluate the impact of Greek Philosophy on Roman poetry through extending the series of intertexts which we may observe Ovid alluding to. Through following and analysing these sets of allusions this work will seek to gain an insight into Ovid's depiction of the metatextual universe.

For my Parents

The scientist's demand that nature shall be lawful is a demand for unity. When he frames a new law, he links and organizes phenomena which were thought different in kind; for example, general relativity links light with gravitation. In such a law we feel that the disorder of nature has been made to reveal a pattern, and that under the colored chaos there rules a more profound unity (Jacob Bronowski 'On the Creative Process', in: *A Sense of the Future*).

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Abbreviations

- D-K Diels-Kranz (H. Diels and W. Kranz) 1951. *Fragmente der Vorsokratiker*, 6th ed. (Berlin)
- KRS Kirk, G. S., Raven, J. E., Schofield, M. 1984. *The Presocratic Philosophers*, 2nd ed. (Cambridge)
- LIMC *Lexicon Iconographicum Mythologiae Classicae*
- L-S Lewis, C. T., Short, C. *A Latin Dictionary*
- LSJ Liddell, Scott, and Jones. *Greek English Lexicon*

Introduction: Intertextual Framework

Ὅμηρος φύσεως λαχὼν θεαζούσης ἐπέων κόσμον ἐτεκτίνατο
παντοίων.

Homer, on obtaining his lot of divine nature, fashioned a *kosmos* from all kinds of words (Democritus fr. Taylor D13 / DK B21).

1. INTRODUCTION

In the above fragment from Democritus, Homer is described as forming a κόσμος from the variety of his words. κόσμος can mean ‘order’ and so here refers to the order of the words which constitute the text; however, κόσμος, particularly in philosophical discourse, can specifically mean the ‘world-order’, that is the ‘universe’. In this sense Democritus also implies that Homer creates a universe from the organization of his words. A similar parallel between the structure of the universe and the text may be observed in the opening of Ovid’s *Metamorphoses*. This work will examine Ovid’s depiction of the formation of the universe in the *Metamorphoses* from primordial *chaos* to the creation of humans and animals. It will show how Ovid depicts this universe as inherently unstable and continually undergoing transformation. It will argue that just as Ovid portrays his universe as continually shifting and transforming, so too he represents the text as similarly undergoing constant change and alteration. The universe of the *Metamorphoses* takes form through the mixing and subsequent rearrangement of the physical elements. The text also can be imagined as a patchwork of quotations and allusions to other sources, of disparate elements brought together and rearranged. In taking an intertextual approach to Ovid, this work will demonstrate how the *Metamorphoses* continually forces us to alter our frame of reference, through the use of multiple allusions and alternation between different modes of discourse and genre. It will suggest that Ovid sets up a parallel between the form and content of his

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text in order to fashion a metatextual universe, and, as Democritus says of Homer, to form a cosmos from organization of his words.¹

This work is grounded in the close reading and textual analysis of the *Metamorphoses* and other Ancient Greek and Latin sources prior to Ovid. The world which Ovid describes in the *Metamorphoses* and the creatures which it contains question some of our fundamental ideas on the nature of human identity and the world which we occupy. In particular it undermines any sense of the unity and stability of such structures, and instead presents a world that is characterised by mutability and multiformity. It will be argued that the *Metamorphoses* also questions how we perceive the nature of the text and likewise emphasizes the text's multiformity. This work will illustrate how the reader is often encouraged to engage metatextually with the poem, to identify linguistic features related to its content and to recognize passages from other sources within the text. In refocusing an intertextual approach, this work will argue that the polyphony of allusions which form part of Ovid's text mirror the formation of the world and the creatures that inhabit it, and that Ovid uses the text's linguistic structure to enact the transformations which it describes.

This introduction will begin with a short survey of contemporary critical theory on intertextuality, and in particular its application to Greek and Latin literature. While this will establish a theoretical framework for this work, its secondary intention is to suggest an awareness on Ovid's behalf of ideas comparable to intertextuality. It will suggest that embedded in Ovid's authorial project are a set of ideas which resonate with contemporary discourses. This introduction will then set out a taxonomy for establishing the intertextual relationships between Ovid's text and the known texts to which it alludes. In order to observe a number of these ideas in action, this introduction will also analyse a number of passages from the *Tristia*, where Ovid encourages us to reinterpret and alter our perception of

¹ We might also compare how Lucretius recalls Ennius' depiction of the shade of Homer disclosing the nature of the universe (*rerum natura*) in the underworld (*DRN* 1.124-26), which resonates with the title of Lucretius' poem (*De Rerum Natura*).

the *Metamorphoses*.² In particular it will examine the preface which Ovid argues in *Tristia* 4.7 should be appended to the beginning of the *Metamorphoses*.

Given that this work will examine potential sources for Ovid's depiction of cosmogony and zoogony, it will often be dealing with texts from the domains of philosophy and science. There have been many works which have taken an intertextual approach to the *Metamorphoses*; however, few have considered the degree to which Ovid carefully alludes to philosophical and scientific literature. It will be argued that throughout Ovid's depiction of the formation of the universe, he continually shifts between genres, often switching between mythological narrative and scientific discourse. This introduction will also provide a brief survey of the various philosophical trends which would have been part of Ovid's world and the cultural milieu of Augustan Rome.

2. AN INTERTEXTUAL FRAMEWORK

Ovid has become the poster child for classicists with an eye towards contemporary cultural and literary theory. Sergio Casali (2009, 341) states that it is not by chance that Ovid (along with Vergil) has been seen as 'the undisputed protagonist of the most important attempts at verifying various theories of intertextuality'. Similarly Erossini Spentzou (2009, 382) shows that 'Ovid's protean propensity for transgression, instability and change' has contributed to the popularity of Ovidian studies from the seventies onwards, and in particular to the appeal of Ovid for theorizing classicists (2009, 382). The rise in Ovidian studies has gone hand in hand with postmodernist approaches to literature. We are left with the difficulty of distinguishing two things: on the one hand the critical movement by which Ovidian texts have been used as a sounding board to confirm and experiment with various contemporary critical theories; on the other the historicist question of the

² As Green (2004, 18) and Anderson (1997, 4) argue the *Metamorphoses* was effectively finished at the time of Ovid's exile in 8 AD, despite Ovid's apparent desire to make further changes and corrections (*Tr.* 3.14); the *Tristia* being composed after Ovid's exile is in a position to affect a reinterpretation of the *Metamorphoses*.

reality of the presence of such ideas in Ovid's texts.³ While a degree of caution and scepticism must necessarily be maintained, such approaches have shown Roman poets to be sophisticated artists, who invite their readers to think in open ended ways rather than passively passing on a tradition. This work has revolutionized our approach to Latin poetry and Ovid in particular in the last half century.

2.1 Intertextuality and Contemporary Critical Theory

Before continuing it is necessary to establish a working definition of some of the terms that have so far been used rather loosely in this introduction, as well as the nuanced differences between the types of connections between the texts that we will be looking at. *Intertextuality* and *intertext* are terms that have been used recently in various ways with numerous definitions.⁴ Before the term *intertextuality* was coined by Kristeva, the idea of the text as being a 'mosaic of quotations' was already discussed by Foucault in his 1969 work, *The Archaeology of Knowledge* (2002, 25): 'the frontiers of a book are never clear-cut: beyond the title, the first lines, and the last full stop, beyond its internal configuration and its autonomous form, it is caught up in a system of references to other books, other texts, other sentences'. There is also a certain affinity with *bricolage*, the construction of a work of art through the process of forming improvised structures through the reuse, rehabilitation and recontextualisation of preexisting material. Lévi-Strauss (1962, 26) uses the image of the kaleidoscope to illustrate this effect. Since the image becomes fragmented when viewed through the kaleidoscope, it must be viewed from a series of alternative, or transforming perspectives in order to formulate the pattern of the new image from the fragments of the previous one. When applied to textual appropriation, the process of reuse not only blurs the borders between texts, and between what should be considered internal and external to the text, but also, through altering its context, forces the preexisting material to be reread and transformed. The relativity of the text and the de-

³ For a detailed discussion and reference to the works of these critical authors see below.

⁴ Chandler (2002) proves a useful starting point to beginning a brief survey of Intertextuality.

centralisation of the author were taken up by Barthes, who upon declaring the ‘death of the author’ stated (1977, 146): ‘we know now that a text is ... a multi-dimensional space in which a variety of writings, none of them original, blend and clash. The text is a tissue of quotations drawn from the innumerable centres of culture’.

Intertextuality, then, breaks down any notion of the unity of the text. The creation of the text is by its nature a process of splintering and recombination, a piecing together of fragments derived from exterior sources. In making this process manifest to the reader intertextuality serves to question the text’s stability, singularity, the integrity of its structure, and its relationship to the text that it is referring to. Are we meant to see the presence of the text alluded to as a constituent component of the text, or as something strictly antecedent and external to the text? Intertextuality thus undermines the distinction between interior and exterior, and continually subverts the role of authority. This work will highlight key passages suggesting that the Ovidian text recognizes something resembling this kind of intertextual programme.

2.2 Intertextuality in Latin Literature

It is impossible to systematically review all intertextual studies on Ovid; as Casali (2009, 341) states, this ‘would require a review of nearly the whole of Ovidian bibliography’, which is beyond the scope and remit of this work. Before continuing, however, it is necessary to mention a few works that have significantly impacted on subsequent research. For some time the key text, in anglophone Classical scholarship, that has dealt with intertextuality in Latin literature has been Stephen Hinds’ 1998 work, *Allusion and Intertext*.⁵ He sums up well the form of conceit that Latin poets, such as Ovid, were engaged in, where ‘alluding poets exert themselves to draw attention to the fact that they are alluding, and to reflect upon the nature of their allusive activity’ (Hinds 1998, 1). Hinds (1998, 2) further shows how the ‘Alexandrian footnote’ functions in a similar fashion in ‘the signaling of specific allusion by the poet through seemingly general

⁵ Hinds (1987) already discusses intertextuality in relation to Ovid.

appeals to tradition and report'. Examples of this would include *fama est* 'the report is', *ferunt* 'they relate', and *dicitur* 'it is said'.⁶

Gian Biagio Conte's *The Rhetoric of Imitation* (1986) has also exerted significant impact on recent intertextual studies in Latin literature. Conte, discussing the different modes of allusion and the difference between allusion and influence, shows how intertextuality is integral to understanding the text: 'intertextuality, far from being a matter of merely recognizing the ways in which specific texts echo each other, defines the condition of literary readability. Certainly the sense and structure of a work can be grasped only with reference to other models hewn from a long series of texts of which they are, in some way, the variant form. The literary text realizes, transforms, or transposes in relation to these essential basic models' (29). The process of transformation and the recognizing of the plurality of the text are integral to its meaning. Each text only exists within the matrix of other texts which impact upon and are essential to the reading of the text.⁷

The 2001 collection of essays by Alessandro Barchiesi, *Speaking Volumes: Narrative and Intertext in Ovid and Other Latin poets*, not only addresses more specifically intertextuality in Ovid but asks a number of important questions about intertextuality itself. He states that intertextuality is an event rather than an object: 'It is not a thing, a fixed given to be analyzed, but a relation in motion, even a dynamic of destabilization' (142). He also questions how much of the text alluded to is present in the alluding text, whether the prevailing sense must be one of similarity or of difference. Barchiesi also makes an important and subtle point on the hierarchy of status between the alluding text and the text being alluded to. While the alluding text is generally treated in criticism as 'open, problematic,

⁶ For instance at *Met.* 1.7, Ovid describes how the primordial universe is referred to by the name *chaos* (*quem dixere chaos*). Similarly in the *Fasti* (1.103), Janus states how the ancients used to call him *chaos* (*me chaos antiqui vocabant*). For a further discussion of these lines, see chapter 3 §2.2 and chapter 5 §2.

⁷ Sergio Casali (2009, 343) summarizes some of the key aspects of Conte's work, including the distinction that Conte makes between allusion as metaphor, allusion as simile, and allusion as ironic effect.

Intertextual Framework

negotiable’, the meaning of the ‘model’, the text being alluded to, ‘is thought to be reasonably certain and univocal’ (142), which need not be the case. The text being alluded to may itself contain numerous allusions to other texts. While it has become commonplace to treat Ovidian texts as actively problematizing the nature of the intertextual engagement that the reader is being drawn into, it is also necessary to treat the ‘model’ texts as at least having the potential to be likewise engaged.

Damien Nelis’ 2001 book, *Vergil’s Aeneid and the Argonautica of Apollonius Rhodius*, has been another key work in the development of intertextual approaches to Greek and Latin texts. In his opening chapter he sets out the concepts of ‘two-tier allusion’ and of ‘window reference’, and identifies the process by which the ‘imitator’ looks through one ‘model’ to the other.⁸ In this case Vergil looks to Homer through Apollonius. Nelis (2009) applies a similar approach to the *Metamorphoses*, using the concept of the ‘double allusion’, whereby the alluding author simultaneously refers to its ‘model’ and the text which the ‘model’ is imitating. Nelis shows Ovid simultaneously alluding to Apollonius Rhodius (4.672-80) and Empedocles (fr. Inwood 61, 64, 66); Nelis also demonstrates that Apollonius in the same passage is similarly alluding to Empedocles, thus Ovid not only alludes to both texts but refers to Apollonius’ allusion to Empedocles. Hardie (1995, 208) likewise shows Ovid alluding to Empedocles via Lucretius.⁹ The works of Damien Nelis and Philip Hardie in particular provide much of the groundwork for some of the approaches taken in this

⁸ Panoussi’s (2002) review provides a useful summary of Nelis’ methodology.

⁹ Richard Thomas (1986, 188) had already used the term ‘window reference’, which he defines as ‘the very close adaptation of a model, noticeably interrupted in order to allow reference back to the source of that model: the intermediate model thus serves as a sort of window onto the ultimate source, whose version is otherwise not visible. In the process the immediate, or chief, model is in some fashion “corrected”’. Thomas (1999, 2001) discusses further intertextuality in Vergil and (2009) Ovid’s reception of Vergil. Other works that deal with intertextuality in Greek and Latin literature that should not be overlooked include Knox (1986), Farrell (1991), Henderson (1999), Edmunds (2001), and Hutchinson (2013). While further studies in the wider field of intertextuality worth consulting include Worton and Still (1990), Plett (1991), Pucci (1998), and Allen (2000).

work. Their arguments that Ovid alludes in particular to Lucretius and Empedocles demonstrate Ovid's engagement with philosophical discourse, particularly through the multiplication and layering of allusions.¹⁰

As this work will attempt to identify allusions to Greek sources as well as Roman, the approach of Van Tress (2004) should also be noted, and in particular her analysis of how Ovid alludes to Callimachus and how Callimachus provided a model for the type of allusive activity we see Ovid engaged in. Hutchinson (2013) also provides a broader study of intertextuality between Greek and Roman authors across a variety of discourses and genres.

This work will seek to reevaluate the impact of Greek Philosophy on Roman poetry through extending the range of texts that may have influenced Ovid's cosmogony. In particular it will argue that Plato's *Timaeus* exerted a significant impact on the cosmogony of *Met.* 1. In order to establish the influence of Greek philosophical texts on the *Metamorphoses*, this work will also employ a source driven philological approach in combination with intertextuality. Throughout this work it will be necessary to first gauge the impact of a particular text on the *Metamorphoses*, before analysing how this changes our reading of Ovid's cosmogony. By exploring how these different approaches relate to each other this work will show how expanding the range of intertexts that we can observe Ovid alluding to is necessary for deepening our understanding of the meta-literary agenda of the *Metamorphoses*. Similarly the application of intertextual theory to the *Metamorphoses* allows us to discover new textual connections and enrich our understanding of literature as a whole.

3. A TAXONOMY OF INTERTEXTUAL CATEGORIES

Before continuing, it is necessary to set out some working definitions of the different types of intertextual relationships between the texts that will be analysed in this work. The terms *allusion* and *referral* will be used interchangeably throughout in relation to the process by which, whether

¹⁰ These passages from Empedocles, Apollonius Rhodius and Lucretius as well as the arguments made by Hardie and Nelis will be discussed further in chapter 3.

directly or indirectly, the author indicates the presence of another text in her/his work. Since these allusions are intended by the author, they will be classified as *performed textual connections*. *Influence* on the other hand will more generally refer to the idea that one work can generate an effect on another without there being any allusion present, that is without the author indicating that an exterior text is affecting or has a presence within the given text. Since it is the reader that forms these connections, without the intent of the author, these will be classified as *observed textual connections*. In all cases below the text in the foreground of a given discussion will be referred to as *Text A*, which in most cases will correspond to the *Metamorphoses*, while *Text B* will refer to a text generally but not exclusively prior and exterior to *Text A* and which has some form of relationship to *Text A*. The proposed hierarchy of types of textual relationships is as follows:

Performed Textual Connections

1. *Quotation or Paraphrase*—*Text A* reproduces *Text B*, either directly through quotation or indirectly through paraphrase or summary, naming *Text B* or its author while doing so.
2. *Direct allusion*—*Text A* deliberately alludes to and indicates the presence of *Text B*, where the goal of *Text A* in that instance is to refer the reader to *Text B* and indicate its presence in *Text A*.
3. *Self-Reflexive Allusion*—*Text A* not only directly alludes to *Text B*, but indicate to the reader that it is performing this allusion, thus encouraging the reader to contemplate the allusive activity. While in 1 and 2 *Text A* refers the reader to *Text B*, in 3 there is an implicit referral to the allusive activity itself.
4. *Double Allusion*—*Text A* simultaneously alludes to two texts, *Texts B* and *Text C*; often in this case, *Text A* alludes to *Text B*'s allusion to *Text C*.
5. *Window Allusion*—Similar to 4, *Text A* refers simultaneously to *Texts B* and *C*; however a 'window allusion' suggests a hierarchical favour for the earlier *Text C*, while the middle *Text B* often serves as a conduit which may be utilised to alter the perception of *Text C*. In this case *Text B* does not necessarily have to be referring to *Text C*.

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6. *Corrective Allusion*—*Text A* refers to *Text B*, in such a way as to present a counter-argument or idea to the one being viewed in *Text B*.

7. *Double Corrective Allusion* (usually takes the form of ‘Remythologizing’)—6 can be extended into 7 where *Text A* identifies that *Text B* has argued against *Text C*, leading *Text A* to argue against *Text B* in favour of *Text C*.

8. *Dialogic Allusion*—*Text A* and *Text B*, being written by the same author concurrently, or within a short period of time, are designed to allude to each other in such a way as to construct a dialogue between the two texts. There is no hierarchy in that both texts refer to each other.

9. *Internal Allusion*—*Text A* alludes to a previous passage within *Text A* often through the guise of an additional narrator or character. An *Internal Allusion* is naturally reflexive as it is performed by the author.

Observed Textual Connections

10. *Direct Influence without Allusion*—*Text A* is influenced by *Text B* but does nothing explicitly to indicate this influence.

11 *Model*—*Text B* provides a model or framework for a particular idea or set of ideas in *Text A*. Similar to 10 the influence is not overtly indicated.

12. *Influence or allusion based on inductive evidence*—Given that we have seen the influence of *Text B* on *Text A* elsewhere (or *Text A* alluding to *Text B*), we can postulate that *Text B* is influencing *Text A* in this instance as well.

13. *A Common Source*—*Text A* and *Text B* allude to or are influenced by a common source *Text C*.

14. *The Wider Tradition*—*Text A* (and, or *Text B*) refers to or is influenced by a prevalent idea or theme in the wider tradition of Classical literature, philosophy, culture, etc.

15. *A Lost Intermediary Text*—*Text A* is influenced by a lost *Text B*, which was influenced by *Text C*.

16. *Bricolage*—While it is acknowledged that there is no direct connection between *Text A* and *Text B* whatsoever, *Text B* can be used to aid our reading of *Text A* by providing a different perspective with which to view *Text A*.

The above set of relationships is necessarily abstract and idealised. In numerous instances, correlations between texts may fall between or outside these simplistic categories; however, their function is to elucidate a little further the type of intertextual reading that this work will engage in. We might compare the categories to points in a spectrum, providing a useful critical toolkit for interrogating the *Metamorphoses* passage by passage.¹¹

4. SEQUENCE OF CHAPTERS

The formation of the universe in the *Metamorphoses*, from its primordial origins to the creation of humans and animals, will provide a superficial layout for the organization of topics in this work. The opening chapter will examine the proem of the *Metamorphoses*. It will analyse the dislocated word order of the opening lines and demonstrate how Ovid uses what we will term *reading-as-rearrangement* to enact the first transformation that will occur in the text. From the very outset it will argue that Ovid sets up a parallel between the form and content of his work. The dislocated word-order of the proem will be compared to Lucretius' alphabet analogy, which likewise uses changes in the makeup of words to illustrate alterations in atomic structure. The second chapter, following on from the first, will examine Ovid's use of the term *deducere* in the proem and how this sparks a series of images connected with poetic creativity, spinning and weaving. The crafts of spinning and weaving will also be shown to suggest a relationship between linguistic, atomic, and universal processes.

The third chapter will examine Ovid's depiction of *chaos* and the primordial universe in book 1 of the *Metamorphoses*. It will analyse how Ovid constructs a series of multilayered allusions to scientific, philosophical

¹¹ Other attempts have been made to create various taxonomies for identifying various connections between texts. For instance Thomas (1986, 175) lists the following categories: 'casual reference, single reference, self-reference, correction, apparent reference, and multiple reference or conflation'. Edmunds (2001, 133-63) also provides a lengthy systematization of different intertextual relations. Van Tress (2004, 7-21) problematizes this type of approach. In particular she highlights the problem that such taxonomies often depend upon identifying authorial intention.

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and literary works. It will show how this is mirrored in the mixing of opposing elements which takes place in the primordial universe. It will also illustrate how Ovid continually shifts between different genres and modes of discourse, as both the universe and the text are instilled with a fundamental mutability. The fourth chapter will continue to examine potential sources for Ovid's primordial universe. It will focus on Plato's *Timaeus* and argue that Plato's account of cosmogony exerted a significant influence on Ovid's depiction of the formation of the universe. It will consider the means by which the *Timaeus* could have influenced the *Metamorphoses* from a number of different perspectives, including via Stoic and Pythagorean texts. The fifth chapter will compare Ovid's depiction of the formation of the universe in the *Metamorphoses* with that of the *Fasti*. It will consider the influence of Empedocles on both texts, and how Ovid sets up his two accounts of universal formation in parallel. This chapter will focus specifically on the depiction of Janus at the beginning of the *Fasti* and how he may be read as an anthropomorphic representation of the universe. It will also consider how Ovid's depiction of the armillary sphere of Archimedes in *Fasti* 6 creates a further set of textual allusions, while simultaneously providing another model with which to conceptualize the structure and form of the cosmos.

The last two chapters will focus on the creation of humans and animals. The sixth chapter will examine Ovid's depiction of anthropogony and zoogony, and in particular the regeneration of life that takes place after the flood. It will analyse how Ovid constructs a series of allusions to Lucretius and Empedocles, particularly in his account of spontaneous generation. It will also examine a number of structural parallels between Ovid's account of the formation of the universe and its inhabitants with that preserved in the *Bibliotheca Historica* of Diodorus Siculus. It will use this as a means of further interrogating Ovid's integration of various aspects from the domains of universal history, scientific discourse and mythological narrative. The final chapter will examine Ovid's depiction of hybridity. In particular it will focus on the catalogue of hybrids from *Tristia* 4.7 and how these generate a series of allusions to other texts. In particular it will analyse

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how Ovid integrates material from scientific explanations of the early stages in the evolution of living beings with mythological accounts of monsters and portents. It will also compare the catalogue of hybrids in *Tristia* 4.7 to Empedocles' account of the compound creatures and will show how Ovid uses compound adjectives when describing compound creatures as a further means to construct a parallel between the form and content of the text.

Each chapter will present an analysis of a particular aspect of Ovid's representation of the structure of the material world, the formation of the universe and the creatures which it contains; however, this work will also continually seek to identify how numerous aspects of Ovid's representation of the universe may be aligned with particular features of the text. Ovid's use of specific linguistic features, such as compound adjectives and the transposition of words will be shown to mirror various aspects of the subject matter of the text. It is more difficult, however, to argue that Ovid's use of multiple allusions to different texts and discourses is likewise designed to portray how the creation of the text is aligned with the formation of the universe and the structure of matter. In chapters 3 and 5 in particular, the argument that the combination of multiple allusions and the shifting between different modes and discourses is designed to display aspects of the material world will often rely on the suspension of judgement when considering individual instances of allusion. However, the accumulation of evidence presented throughout this work linking textual allusion with universal formation and physical metamorphosis will be argued to be fundamental to Ovid's conception of the structure and substance of the cosmos. Each chapter will function on a series of levels which will often move towards a metaliterary reading of Ovid's depiction of the material world. It is only, however, when the evidence of all chapters is considered as a mutually reinforcing whole that the credibility of the approach should be judged. While arguments concerning Ovid's literary and meta-literary agenda will be frequently restricted to the end of individual chapters, these can be also viewed as signposts for how to push this research further.

This work will first seek to reevaluate the impact of Greek philosophy on Ovid's depictions of cosmogony in the openings of the

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Metamorphoses and *Fasti*. In particular it will argue that Ovid frequently alludes to Plato's *Timaeus*. By identifying new connections between the cosmogonies of the *Metamorphoses*, *Fasti* and the *Timaeus*, while pairing these with the extensive allusions that have already been identified in Ovid's depictions of cosmogony, this work will examine how the new connections which it identifies completely changes our perception of Ovid's cosmos and its relationship to the poet's allusive activity. It will show that by combining allusions to the anti-teleological world of Lucretian physics and the *Timaean* world of divine design, Ovid frequently switches between a world governed by abstract cosmological forces and one carefully designed by the universal demiurge. This also may be read in terms of the tension between order and disorder that runs throughout the cosmogony of *Met.* 1, as the world is frequently on the brink of a return to cosmological chaos. This tension can also be applied to the Ovid's meta-literary agenda, as authorial control threatens to give way to a chaotic mixture of allusions.

This work will also analyse a further effect of the mixture of allusions present in Ovid's depictions of cosmogony, namely the blending of scientific and mythological discourse. It will examine Ovid's strategy of remythologizing scientific accounts of universal creation through the use of multiple allusions in order to undermine the distinction between poetic and philosophical discourse. It will demonstrate how this fundamentally destabilizes the universe presented in the text, which frequently switches between a world of abstract cosmological forces and one of fully personified deities. It will argue that the concept of the εἰκὼς μῦθος 'likely story' from Plato's *Timaeus* provides a model with which to view the slippery world of the *Metamorphoses*. It will also demonstrate how Ovid's presentation of different cosmogonies in different texts, containing allusions to different philosophical and mythological models for the cosmos prevents the possibility for a single model of the universe. This will be shown, not only to question the nature of philosophical truth but, to undermine the ontological stability of cosmic, corporeal and textual form.

5. THE PHILOSOPHICAL BACKDROP

In order to establish a clearer understanding of the relationship between the texts which will be discussed in this work, some of which have been briefly mentioned above, it is necessary at this point to make some preliminary statements about the influence of Greek philosophy on Roman literature. The widespread penetration of Greek philosophy, and Plato and Aristotle in particular, can most plainly be observed in the works of Cicero, particularly in the *Academica*, the *De Finibus*, the *Tusculan Disputations*, the *De Natura Deorum*, and the *De Divinatione* (Tarver 1997, 143). Varro also contributed heavily to the ordering of Greek philosophy in Rome, particularly in his *De Philosophia* (Tarver 1997, 163). Plato and Aristotle, or more accurately their associated schools, also functioned as conduits for the doctrines of the Presocratics, whose influence was likewise felt, at least in a mediated sense, in Augustan Rome. As Campbell (2003, 1-2) shows, the philosophical doctrines of Plato, Aristotle, and the *Timaeus* in particular, exerted their influence on Cicero and Varro, both directly and via other intermediary texts. The complexity of the chain of influences is further complicated by the parallel Pythagorean and Neopythagorean traditions, which further adapted Platonic material in different texts and contexts. The points of contention between Epicurean and Stoic doctrines also often focused on ideas which can be traced to earlier philosophical doctrines. Arguably the most influential philosophical work on the *Metamorphoses* was Lucretius' *De Rerum Natura*, which provides direct access to Epicurean thought as well as that of the Atomists.¹² If we add to this the resurgent commentary tradition in the later Hellenistic period as well as the use of philosophical handbooks, we are left in no doubt that the ideas of Plato and Aristotle along with many other Greek philosophical works and in particular the Presocratics were not merely known, but deeply ingrained in the intellectual society of the late Republic and Augustan Rome.¹³

¹² Lucretius mentions the difficulty of elucidating the discoveries of the Greek philosophers in Latin verse (*DRN* 1.136-37).

¹³ The two editions of collected essays *Philosophia Togata I* (1989) and *II* (1997) edited by Barnes and Griffin accurately illustrate the impact of Greek philosophy and Plato and

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Given the penetration of Greek philosophy in Roman culture, how should we gauge the impact of this on Lucretius and Ovid in particular? For Lucretius, it has been commonplace to characterise any trace of Greek philosophy as derived from Epicurus and in turn any traces detected in Ovid as derived from Lucretius and the Stoics. If, however, we start to open up the range of potential texts that Ovid and Lucretius may have been drawing upon, we can begin to enhance our understanding of the possible modes of influence and reception. We can start to identify the nature of these textual relationships, whether they indicate the direct interaction with an ‘original’ text, the engagement with one text through another, the presence of a lost intermediary text, the drawing from an earlier text in a sequence which has later diverged, or the use of commentaries and handbooks. Furthermore, if we apply the methodology that Cameron (2004) has recently shown in relation to the use of mythological handbooks, and consider the possibility of Ovid in particular engaging with sources in a variety of different ways and even with the one text from a variety of different angles, we begin to come closer to a newly enriched understanding of Ovid’s intertextual approach.

We must also be aware of the tendency of segregating texts based on more contemporary ideas of literary genre. Why should it immediately be perceived as ‘natural’ for Ovid to draw from Hesiod but not from Plato? Is this because we more traditionally place the *Metamorphoses* (even if loosely) in the genre of mythological epic? One of the trademarks of the *Metamorphoses* is that it displays transformation as occurring to the text as well as its characters, and one of the ways in which Ovid does this is to continually alter the perceived mode or genre of the text. Given that the opening of the *Metamorphoses*, as we shall see in the following chapters, may be read as deliberately mixing cosmogonic mythology and

Aristotle in particular on Rome. Sedley’s (1997, 110-29) chapter in the second collection demonstrates the revival of Platonic commentary in the first century BC and how this was used for the task of rebuilding Plato’s authority. Barnes (1997), also from this collection, astutely demonstrates the means by which Greek philosophy arrived in the Roman world. The recent collection of essays edited by Garani and Konstan (2014) also highlights the impact of Greek Philosophy on Roman authors.

philosophical discourse, there is a need to address the potential that Ovid is equally constructing careful allusions to philosophical and scientific texts.

6. BEFORE THE BEGINNING AND AFTER THE END: THE REVISED

PREFACE TO THE *METAMORPHOSES*

This section will examine the revised preface to the *Metamorphoses* which Ovid supplies in the *Tristia*. It will serve as a preliminary example of the type of metatextual concerns with which this work will be engaged in, and the complexity of establishing the chain of textual relations. In *Tristia* 3.14, Ovid portrays the *Metamorphoses* as unfinished. He says that he would have given the text a *certius nomen* ‘more fixed name’, and since he was not given the chance to correct it, *nunc incorrectum populi pervenit in ora* ‘now unrevised it arrives in the mouths of the people’ (22-23). There are few indications that suggest that the *Metamorphoses* has not been thoroughly revised. The question should not be whether the *Metamorphoses* is unfinished or not, but why Ovid chooses to portray it as so. Ovid’s depiction of the *Metamorphoses* as unfinished could provide the potential for it to transform further, through the process of revision.

Ovid displays an attempt to undertake such a transformation of the text in *Tristia* 1.7 where he presents a new preface that is to be added to and placed before the opening lines of the *Metamorphoses*. He instructs that the following six lines should be appended:

‘orba parente suo quicumque volumina tangis,
his saltem vestra detur in urbe locus.
quoque magis faveas, non haec sunt edita ab ipso,
sed quasi de domini funere rapta sui.
quicquid in his igitur vitii rude carmen habebit,
emendaturus, si licuisset, erat.’

‘All you who touch these rolls bereft of their father, to them at least let a place be granted in your city! And your indulgence will be all the greater because these were not published by their master, but were rescued from what might be called his funeral. And so

whatever defect this rough poem may have he would have corrected, had it been permitted him' (tr. adapted Wheeler 1924/1996).¹⁴

Through the preface Ovid attempts to transform the *Metamorphoses*, so that it will correspond more readily to the fate of its author; he describes the *Metamorphoses* as *rudis* 'rough' in order to mirror the image of the poet in exile.¹⁵ Instead of a means of poetic immortality, the emphasis is more strongly on the physical frailty of the work; having been rescued from the pyre, the preface attempts to rewrite the text to more directly parallel the fragility of the physical body. At *Tristia* 1.7.13, Ovid refers to the *Metamorphoses* as the *carmina mutatas hominum dicentia formas* 'the verses that speak of changed forms of men'. He not only quotes the *mutatae formae* of the opening line of the *Metamorphoses*, but more specifically realises it in terms of the changing circumstances of human experience. The portrayal of the *Metamorphoses* as unfinished fixes it in a moment of transition, as we are left to question how Ovid would have revised the text if he had been given the opportunity to do so. This further informs and alters our reading of Ovid's description of the *Metamorphoses* as a *carmen perpetuum* in the proem at *Met.* 1.6, particularly if the preface is included. The new preface would also project the transformation that the poet has undergone in exile upon each and every of the transformation stories that will follow. As Hinds states (1985, 25): 'Coming after these depressing lines, *in nova fert animus ... (Met. 1.1)* will no longer be able to engender quite the same *frisson* of excitement that it does in the original version of the *Metamorphoses*. And, like any preface, this new one will inevitably seek to exercise some influence over the poem as a whole: by *rewriting* its

¹⁴ All displayed quotations from the *Tristia* and *Ex Ponto* follow Wheeler's Loeb (1924), revised by Goold (1996).

¹⁵ *rudis* is also a term which Ovid uses at the very beginning of the *Metamorphoses* to describe the 'rough' and unformed nature of the primordial universe (*Met.* 1.7). This would also have the effect of setting up a more obvious parallel between Ovid's poem and the universe which it depicts.

opening lines, Ovid will force us to *reread* the entire poem in a slightly different light'.¹⁶

It has been argued that the revised preface may itself be an allusion to the *pre-proemium* of the *Aeneid*. The *Aeneid* was believed by later writers to have contained an alternative proem, the so called *pre-proemium*, which began *Ille ego qui quondam gracili modulatus avena carmen* 'I am he who once measured a song on a slender pipe' (Servius *Aen.* 1. *praef.*). Vergil was said to have deleted this proem when he supposedly rearranged the sequence of the opening books (moving 2 and 3 from the beginning of the poem to their current position). Vergil's apparent desire to burn the unpublished manuscript of the *Aeneid* on his deathbed, due to it being unfinished (recorded in the *Vita Suetonii vulgo Donatiana* 39-41), is also recalled in Ovid's attempt to burn the *Metamorphoses* at *Tristia* 1.7.15-16.

Conte (1986, 84-86) argues that the epigram preceding the *Amores* is an allusion to the *pre-proemium* of the *Aeneid*. Here Ovid states how he has cut the *Amores* from five books to three, and that if the readers should not like his newly revised edition at least they have two less books to read. Immediately following this four-line epigram, the *Amores* begins with *arma gravi numero*, a well recognized allusion to the *Aeneid*'s opening, *arma virumque cano*. Conte uses this to argue that the *pre-proemium* predates the *Amores* and that Ovid is alluding to it.¹⁷ If Conte is correct then the revised

¹⁶ Francesca Martelli, in her recent book *Ovid's Revisions: The Editor as Author*, argues extensively that Ovid's attempt at revising the *Metamorphoses* is itself a statement and a means of textual transformation (2013, 1): 'In choosing to advertise the revised status of all his major works, Ovid invites us to plot and interrogate the commentary that revision imposes on them. However we construe or interpret that commentary, authorial revision lends itself to being unraveled and viewed *as* commentary because, as a mode of textual transformation, it is a process that one can plot. Yet revision – authorial revision – transforms more than simply the relationship between 'revised' and 'original' texts; it reconfigures our perspective on a series of other relationships – between author and text, text and oeuvre, author and oeuvre, etc.'

¹⁷ Farrell (2004, 50-52), who ultimately follows Conte's arguments, points to Ovid's frequent use of the phrase *ille ego qui* (the first three words of the *pre-proemium*) in his exile poetry (*Ex Ponto* 1.2.33-34; 129-136; 4.3.9-18). Farrell (2004, 51) states that the phrase functions as a 'marker of posthumous literary fame'.

preface of the *Metamorphoses* provided in *Tristia* 1.7 may also be read as an allusion to Vergil's desire to project an image of the *Aeneid* as unfinished as well as his estrangement from the immortal fame of his own work.

Andrew Laird sheds further light on the relationship between the *pre-proemium* and the *Tristia* in his chapter, *Fashioning the Poet: Biography, pseudepigraphy and textual criticism*, from the forthcoming book *Ancient Lives of Virgil*. Laird, arguing against Farrell and the attribution of the *pre-proemium* to Vergil, reverses the trajectory between the *Tristia* and the *pre-proemium*. Laird convincingly argues that Ovid's *Tristia* influenced later writers to construct the account of Vergil's desire to burn the *Aeneid* on his deathbed: 'But it is obvious ... that Ovid's conceit of burning the *Metamorphoses* was what prompted the report that Virgil wanted to 'cremate' the *Aeneid*'. Laird shows how Ovid's remarks at *Tristia* 1.7.28 that his works lacked the finishing touch 'are echoed in language used in the *Vita Suetonii vulgo Donatiana* to describe Vergil's intended finalisation of the *Aeneid*'.¹⁸ He also states that it is significant that Suetonius goes on to transmit the *pre-proemium* of the *Aeneid* after a discussion of the incompleteness of his verses in the poem. This follows the same sequence as *Tristia* 1.7, where Ovid gives the revised preface after describing the roughness of the *Metamorphoses*.

Depending on which line of argument we follow, either the *Tristia* alludes to the *pre-proemium* of the *Aeneid* or the *Tristia* influenced the construction of the myth of the *pre-proemium* by later writers. This may serve as a prime example of the complexity of textual relationships and the difficulties of establishing a trajectory of influence. It demonstrates how the *Tristia*, not only alters our perception of the *Metamorphoses* and the *Aeneid*, but demonstrates how a later text may come to alter our perception of a previous one. The fundamental idea of the revised preface is that it at once allows the author to alter and destabilise the structure of the text, while

¹⁸ Laird states that Ovid's reference to the burning of his books in the *Tristia* 'are instances of a common *topos*', pointing to a declamatory exercise by Seneca the elder in an imaginary deliberation, where Cicero contemplates whether he should burn his own writings (Seneca, *Suasoria* 7).

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simultaneously projecting a picture of the text as unfinished, as a means of reasserting his authority over the text from an external perspective.¹⁹ The numerous allusions to the *Metamorphoses* that occur in the *Tristia* may be read as an attempt by Ovid to illustrate the process of intertextuality in action. In creating a discourse between these texts, Ovid arguably displays how intertextuality can be a process generated by the author. The following chapter will begin where the new preface seeks to leave off, with the proem and the beginning of the *Metamorphoses*.

¹⁹ Laird (forthcoming) states that ‘by providing his new preface to the work, [Ovid] seeks to inject his own personality or presence into that entire poem, and to control and change the way we look at its contents’.

Chapter 1: Atoms and Language

1. INTRODUCTION

This chapter will examine how Ovid opens the *Metamorphoses*. It will analyze how the syntactic structure of the proem of the *Metamorphoses* enacts the first transformation that occurs in the text: as the reader encounters the opening sentence, he experiences a shift in the perceived meaning of the sentence through the process of reading it. This chapter will argue that Ovid immediately constructs a parallel between the text itself and the bodily transformations that will be the subject matter of the text. It will also argue that Ovid through the proem encourages the reader to form a habit or tactic of reading, which involves the fragmentation of the sentence into packets of meaning followed by active rearrangement. It will argue that this dynamic of reading-as-rearrangement is mirrored in Ovid's description of the formation of the universe which immediately follows the proem, as Ovid continually aligns the form and content of his work with each other.

The second part of this chapter will analyze how Ovid's use of the proem in the proposed way may be read as a response to Lucretius' use of the alphabet analogy in the *De Rerum Natura*, where language is used to explain the operation of atomic processes and in particular the ability for matter to transform. Much of the second half of this chapter will be devoted to examining potential antecedents for the use of language and textual structures to explain the composition of the material world. In particular it will analyse analogies between the text and the universe in philosophical discourse, where this idea appears to be prevalent, including the fragments of Democritus and Leucippus, Plato's *Cratylus*, *Theaetetus*, and *Timaeus*, Epicurus' *On Nature*, and Cicero's *De Natura Deorum*. Comparisons with these texts will be used to demonstrate how Ovid's aligning of universal and textual structures in the opening of the *Metamorphoses* may well have its roots in philosophical discourse.

2. REREADING THE PROEM

2.1 *The Language of Flux*

In nova fert animus mutatas dicere formas
corpora; di, coeptis (nam vos mutastis et illa)
adspirate meis primaque ab origine mundi
ad mea perpetuum deducite tempora carmen!

My spirit moves me to speak of shapes changed into new bodies; o gods inspire my beginnings (for it was you that changed them also), and from the first creation of the world, lead down my continuous song to my own times (1.1-4).¹

The meaning of the opening sentence of the *Metamorphoses* transforms as we are reading it. As we begin to read the first part of the opening line, *In nova fert animus*, our initial interpretation of the beginning of the sentence reads: ‘my spirit carries [me] onto new things’. This sense unit, however, is immediately altered by *mutatas* which challenges and transforms our initial reading, and which is further modified by the enjambed *corpora*, so that taken as a whole the sentence reads: ‘my spirit carries me to speak of shapes changed into new bodies’.² The dynamic is relatively straightforward, the perceived meaning of the sentence starts out in one way and, through the linear process of reading, transforms into something different; the reader is forced to reconstruct the meaning of the sentence as he is reading it; as Spentzou (2009, 387) states, ‘meaning starts one way and in the process shifts to accommodate the needs of the new structure’. The opening sentence of the *Metamorphoses* is the first transformation to take place in

¹ All displayed text of the *Metamorphoses* throughout this work will follow Tarrant’s OCT (2004), unless otherwise stated, with Anderson’s *Teubner* (2008) edition frequently consulted. Translations of the *Metamorphoses* are my own unless otherwise stated, with Hill’s 1985-2000 translation providing an aid.

² Nelis (2009, 250) and Wheeler (1999, 8) treat in detail the shifting structure of the opening sentence of the proem.

the text and from the very outset sets textual and corporeal transformation in parallel.

The ‘shapes changed into new bodies’ of course refer to the numerous bodily transformations that will occur in the text; however, in the immediate context of the reader’s reconstruction of the opening sentence, the shapes changed into new bodies could as easily refer to the metamorphosis that is taking place on a textual level, as the ‘shapes’ of the words are transformed into ‘new bodies’ of meaning.³ The parenthetical statement that follows may be equally addressed to the reader and the transformation that has occurred to the meaning of the words and the sentence (*nam vos mutastis et illa* ‘for it was you that changed them also’).⁴

A similar dynamic linking the form and content of the text may also be observed at the beginning of the *Amores*, where Ovid uses a paratextual technique that immediately draws the reader to the structure of the sentences on the page.⁵ After setting out to speak of *arma* ‘arms’ and *violenta bella*

³ In the *Tristia* (1.7.13), Ovid refers to the *Metamorphoses* as *carmina mutatas hominum dicentia formas* ‘the verses that speak of changed forms of men’; for a discussion of this passage, see Introduction §6. As Ahl (1985, 51) states in relation to Ovid’s proem, *forma* can apply to the inflection or grammatical “form” of a word as Varro illustrates in the *De Lingua Latina* (9.109). Ahl also states, referring to Quintilian (*Inst.* 1.4.13), that ‘the various changes of grammatical forms or Varronian “declensions” are called *mutationes*, “mutations,” in Latin grammatical parlance’.

⁴ I follow here both Tarrant’s *OCT* (2004) and Anderson’s *Teubner* (2008) editions which favour *illa* over *illas* despite its weaker attestation in the MSS. Kovacs (1987, 458-49), following on from Kenney (1976), states that *illa* makes more sense both grammatically and in terms of meaning: ‘the gods are asked to inspire Ovid’s undertaking, an undertaking they have changed, just as they changed the shapes of things that are its subject’. This asserts an implicit connection between the transformation of the forms into new bodies and the changes which the gods have exerted over the p(r)oem itself. Anderson (1997, 151) also opts for *illa* showing that the *et* implies the comparison with the ‘beginnings’.

⁵ Paratext is used in this instance to refer to how the poem appears on the page and specifically how an author draws attention to the appearance of the poem. Genette (1997, 1-2) defines the paratext in terms of the threshold: ‘more than a boundary or a sealed border, the paratext is, rather, a *threshold*, ... an “undefined zone” between the inside and the outside, a zone without hard and fast boundary, ... an edge, or ... “a fringe of the printed text which in reality controls one’s whole reading of the text”’.

‘violent wars’ in *gravi numero* ‘heavy metre’, the reader’s perception of what is to follow is immediately destabilized in the second line, when Cupid steals the final foot of the second hexameter, causing the poem to transform from epic to elegy:

par erat inferior versus; risisse Cupido
dicitur atque unum surripuisse pedem.⁶

The second verse was equal to the first – but Cupid it is said was laughing and stole one foot (1.3-4).

The alteration of the perceived structure of the words on the page generates a wider metamorphosis in the text which fundamentally changes its meaning and genre.⁷ Wheeler (1999, 9), who likewise compares Ovid’s technique in the openings of the *Amores* and *Metamorphoses*, states that in both openings ‘the poet exploits the reader’s habit of forming expectations and provisional meanings as soon as possible’.

2.2 *The Proem as Rhetorical Trope*

Even for a native Latin speaker, the dislocated word-order of the opening sentence of the proem would be disconcerting enough to encourage a second glance. While the process of fronting and dislocated word-order is deeply imbedded in Greek and Latin literature, what is occurring in the opening sentence of the *Metamorphoses* is distinctly different, as any form of skeleton for the arrangement of the words is abandoned. Wheeler (1999, 10) states that ‘while readers of Latin may be accustomed to suspending their judgment until the end of a sentence, and thus evolving their expectations more slowly, there is plenty of evidence to suggest that they

⁶ All displayed quotations from the *Amores* follow Kenney’s OCT (1961)

⁷ Anderson (1997, 151) states that the opposite metrical shift occurs in the proem of the *Metamorphoses*, where he argues the expected elegiac meter transforms into hexameter. This would appear to be based on the idea that the *Metamorphoses* is Ovid’s first foray into hexameter epic.

too make provisional sense out of a combination of events at the simplest level’.

The dislocated word-order of the proem can be read as an example of the rhetorical trope of Hyperbaton as set out in the *Rhetorica ad Herennium*⁸ (4.32.44): *Transgressio est, quae verborum perturbat ordinem perversione aut transiectione*. ‘Transposition is when the order of the words is disturbed either by turning around or by transferring’. Caplan (1954) translates *Transgressio* as ‘Hyperbaton’ and *perversione aut transiectione* ‘by Anastrophe or Transposition’. Caplan adopts the terminology of Quintilian, who later defines Hyperbaton in the *Institutio Oratoria* (8.6.62, ed. Russell 2001): *id est verbi transgressionem* ‘that is the going across of a word’, transposed some distance from its original place in order to generate a stylistic effect: *at cum decoris gratia traicitur longius verbum, proprie hyperbati tenet nomen* ‘but when a word is moved far away for an agreeable effect, the particular name used is Hyperbaton’ (8.6.65). Quintilian also calls the *anastrophe* a ‘turning around’ (*reversio*) of the syntactically correct word-order (8.6.65). So while *Anastrophe* reverses the order of words in a particular phrase, transposition moves the words to different points in the sentence, often separating adjectives from the nouns which they modify.⁹

Quintilian criticizes verses where transposition creates obscurity and the meaning is not discovered until reaching the end of the sentence (8.2.14), while also acknowledging that Latin verse would be harsh, rough and disjointed without such dislocation (8.6.62).¹⁰ He compares the process of forming a good sentence to the building of an architectural structure:

⁸ The *Rhetorica ad Herennium* was studied in the Middle Ages as a work by Cicero (Kennedy 1994, 121-22). Kennedy dates its composition to between 85 and 80 BC.

⁹ The author of *On the Sublime* (22.1.1-2) defines hyperbaton as the λέξεων ἢ νοήσεων ἐκ τοῦ κατ' ἀκολουθίαν κεκινημένη τάξις ‘dislocated ordering of words or thoughts out of the logical sequence’ (tr. from de Jonge 2015, 999).

¹⁰ Later still, in the mid 4th century, Donatus (*Ars Mai.* 3.6 = Holtz 1981, 671) divides Hyperbaton into a number of further subheadings, including *Tmesis*, where a word or phrase is separated into two parts by a number of interrupting words and *Synchysis*, where the sentence is formed *ex omni parte confusum* ‘from the confusion of all parts’ (σύγχυσις means a confused mixture). Here the intent can be to create confusion.

words may be transferred from one place to another so as to be joined with those most suitable, just as in a structure built with unhewn stones, where form and shape will dictate the placement of each stone relative to each other (9.4.26-27).¹¹

Approaching the opening sentence of the proem of the *Metamorphoses* with the knowledge that it does not read in a linear fashion causes the reader to alter his process of reading. Instead of reading from left to right, the reader now pieces together the disparate words which fall in different places throughout the sentence; the sentence must be superficially rearranged in order to formulate the 'correct meaning'. The dynamic has shifted from linear reading to reorganization. Instead of passively reading the sentence and witnessing its transformation, the reader is asked to actively engage in the formulation of both its structure and meaning.

It could be argued that this process of reading as reorganization is applicable to the narrative structure of the *Metamorphoses* as a whole; not only is the linear structure of the poem frequently interrupted and undermined by imbedded and multilayered narratives, but the reader is continually encouraged to see comparisons and contrasts between different narrative passages, with narratives later in the text serving to encourage the reader to reread and reinterpret previous ones. The structure of both the poem and the opening sentence does not remain fixed but undergoes rearrangement through the processes of reading and rereading.

2.3 *Metathesis in Philodemus and Dionysius of Halicarnassus*

Part of the process of reading a sentence which contains a severely dislocated word-order involves an active form of rearrangement. This type of reading is comparable to *metathesis* (μετάθεσις), one of the ancient methods of literary criticism, which involved the rearranging of the words

¹¹ De Jonge (2008, 188) shows how Dionysius of Halicarnassus also used the analogy between how an architect has to fit correctly the different parts of a building such as stones and timber in order to create the correct composition (*Comp.* 6.28.5-13).

of a given passage of text for varying effects and means.¹² As a method in literary criticism it becomes prominent in Philodemus' *On Poems*, where, as we shall see, the poet rearranges the word-order of a passage from the *Iliad* to illustrate the negative effects this has on the verse, both in terms of meaning and sound.

As de Jonge (2008, 368) shows, a precursor of this method of rewriting or rearranging sentences can be found in Plato and Aristotle. For instance in Plato's *Phaedrus* (264d), Socrates criticizes the 'Midas epigram' on the basis that even if we were to rearrange the verses of Midas' poem, this would not affect the quality of the poem.¹³ Socrates uses this to prove that it is a bad poem, as he argues that any rearrangement of a poem's constituent elements should affect its composition and thus its overall quality. Armstrong (1995, 222) shows how Aristotle uses the verb μετατιθέναι in the *Poetics* (8.141a33-4) to refer to the transposing of the elements of a poem; however, Aristotle appears to be referring to large sections of a text, potentially entire scenes. De Jonge (2008, 369) also draws attention to the connection between *metathesis* and the preliminary writing exercises that were part of the education system, which often involved the rewriting of texts using a different word-order to demonstrate various stylistic effects.

The implications of *metathesis* on poetic composition were part of a debate between Philodemus and his opponents, the *kritikoi*. In book 1 of *On Poems*, Philodemus presents this debate and provides an example of *metathesis* given by one of his opponents, Heracleodorus. He [presumably Heracleodorus] stated that: [..... μετατιθέμε]||θα, κα[ί]τοι τῶν πραγμάτων καὶ τῶν ὀνομάτων μενόντων, οἷον οὕτως. '(we ruin the verse if) we alter (the word-order), although the contents and the words remain (unaltered) (fr. 38-39 Janko). He then provided the following example from *Iliad* 16.112-14

¹² Crucial to our later discussion *metathesis* can equally refer to the transposition of letters between words. Schindel (1993, 113) shows that *metathesis* involves the exchange of letters, syllables or other quantities such as entire words.

¹³ Dionysius of Halicarnassus (*Comp.* 25.133.7-13) recounts how Plato wrote down various arrangements of the opening lines of the *Republic*.

with numerous words and phrases transposed in order to show how important word-order is:

Homer, <i>Iliad</i> 16.112-114,	Heracleodorus' metathesis ¹⁴
Ἔσπετε νῦν μοι Μοῦσαι Ὀλύμπια δῶματ' ἔχουσαι, ὅπως δὴ πρῶτον πῦρ ἔμπεσε νηυσὶν Ἀχαιῶν. Ἔκτωρ Αἴαντος δόρυ μείλινον ἄγχι παραστάς πληῖξ' ...	Ἔσπετε Μοῦσαι Ὀλύμπια δῶματα νῦν μοι ἔχουσαι ὅπως πρῶτον δὴ νηυσὶν πῦρ ἔμπεσ' Ἀχαιῶν Αἴαντος δόρυ μείλινον Ἔκτωρ ἄγχι παραστάς

The rearrangement of the elements of the verse affects the unity and transforms it from something harmonious to something incoherent. As Janko (2000, 227) states by ‘muddling the text, the scribe proves how upsetting a native speaker of Greek found the disruption of the verse-form’. De Jonge (2008, 369) summarizes the difference in reasoning between Philodemus and his opponents, which Philodemus presents in his text: his critics appear to argue that ‘if the composition of a verse is changed, τὸ ἴδιον (the distinguishing feature) of poetry, that is the euphony that supervenes on the composition, will be lost, although the meaning and the words have not changed. Philodemus, however, objected that if the composition is altered, the meaning of a verse will change as well’.

As Armstrong (1995) demonstrates, Philodemus uses *metathesis* to confirm his general argument that form and content are interrelated. As we have seen, Ovid achieves a similar parallel between form and content in the opening sentence of the *Metamorphoses*, where the transformations which will be the subject matter of the text are first illustrated in the transformation of meaning which takes place in the opening sentence, achieved using dislocated word-order. This dynamic of the proem may well stem from

¹⁴ I follow de Jonge (2008 372) in leaving out the critical signs of the papyrus text as there is no uncertainty as the words are simply a rearrangement of *Iliad* 16.112-14.

Philodemus' argument about the interrelation between form and content and the thriving debates on this subject matter during this time period.¹⁵

Dionysius of Halicarnassus also uses *metathesis*, particularly in the *De Compositione Verborum*. As de Jonge (2008, 368) argues, for Dionysius in particular *metathesis* was a form of 'language experiment intended to demonstrate the particularities of a text'. Dionysius primarily used *metathesis* to demonstrate deficiencies in a given text and how these may be corrected. De Jonge (2008, 375) states that in most cases Dionysius' rewritings of this type are designed to prove the artificiality and unnaturalness of a certain passage: 'the original texts are criticised because they contain hyperbaton, anacolutha, obscure words, complex constructions, long-windedness, redundancy, periphrases, grammatical irregularities, unclear figures, or 'theatrical' parallelisms. Dionysius removes these defects and rewrites the passage in everyday language'.¹⁶ One of Dionysius' most elaborate examples of *metathesis* involves the rearrangement of Herodotus 1.6 not once but twice: first in the style of Thucydides, second in that of Hegesias, the archetype of Asiatic perversity (4.18.4-19.18).¹⁷

¹⁵ Porter (1995) examines Philodemus' discussion on form and content and the different works to which he was responding.

¹⁶ De Jonge points to (*Epistula ad Ammaeum II* 11.430.18-20) for what Dionysius of Halicarnassus understood as everyday language in literature: 'those who construct the expression in conformity with common usage' (tr. de Jonge 2008, 375).

¹⁷ Herodotus 1.6 and *metathesis* in the styles of Thucydides and Hegesias

Κροῖσος ἦν Λυδός	Κροῖσος ἦν υἱὸς μὲν	Ἀλυάττου μὲν υἱὸς
μὲν γένος, παῖς δὲ	Ἀλυάττου, γένος δὲ	ἦν Κροῖσος, γένος
Ἀλυάττου, τύραννος	Λυδός, τύραννος δὲ	δὲ Λυδός, τῶν δ'
δ' ἔθνῶν τῶν ἐντὸς	τῶν ἐντὸς Ἄλως	ἐντὸς Ἄλως ποταμοῦ
Ἄλως ποταμοῦ· ὅς	ποταμοῦ ἔθνῶν· ὅς	τύραννος ἔθνῶν· ὅς ἀπὸ
ῥέων ἀπὸ μεσημβρίας	ἀπὸ μεσημβρίας ῥέων	μεσημβρίας ῥέων Σύρων
μεταξὺ Σύρων τε καὶ	μεταξὺ Σύρων καὶ	τε καὶ Παφλαγόνων
Παφλαγόνων ἐξίησι	Παφλαγόνων εἰς τὸν	μεταξὺ πρὸς βορέαν
πρὸς βορέαν ἄνεμον	Εὐξεινον καλούμενον	ἐξίησιν ἄνεμον ἐς τὸν
εἰς τὸν Εὐξεινον	πόντον· ἐκδίδωσι πρὸς	καλούμενον πόντον
καλούμενον πόντον.	βορέαν ἄνεμον.	Εὐξεινον.

I follow the text presented in de Jonge's (2008, 386) discussion of this passage.

Dionysius' manipulation of the word-order in these passages illustrates the transformative power that a change in word-order can have on the style, structure and potentially the genre of a given text.

Philodemus' and Dionysius' elaborate uses of *metathesis* may have provided the inspiration for the dynamic of *reading-as-rearrangement* which the reader of the proem of the *Metamorphoses* is encouraged to engage in. It demonstrates that the proem and the effects generated by its severely dislocated word-order are part of an experimental attitude to textual composition thriving in the literary criticism and poetic theory of the time. Indeed both Philodemus and Dionysius of Halicarnassus could have exerted a very direct influence on Ovid. Philodemus is known to have taught the literary elite of the generation of Horace and Vergil at his school in Naples, where he may well have had very direct contact with both (Armstrong 1995, 224).¹⁸ Dionysius was active in Rome at the time of Augustus, placing him in prime position to exert his brand of poetic theory on Ovid.

Ovid presents the proem of the *Metamorphoses* as directly contradicting many of the tenets of what Dionysius considered to be good verse, as outlined by de Jonge above, as the proem displays many of the characteristics which Dionysius would have sought to 'correct' through *metathesis* in order to extrapolate a more 'natural' order; the process which the reader is asked to engage in when reading the proem is directly comparable to the critic using *metathesis*, as both reader and critic must distinguish what they deem the 'correct order' by rearranging the words.¹⁹

¹⁸ Oberhelman and Armstrong (1995) show how Horace was influenced by Philodemus; in *Satires* 1.4.38b-62, Horace draws attention to the metre and word-order of his own verse in order to ironically show that poetry cannot undergo *metathesis* without being subject to severe injury.

¹⁹ De Jonge (2015, 998-1000) provides a useful analysis of what was considered 'natural' word-order by the likes of Dionysius of Halicarnassus: 'A fundamental distinction in ancient rhetorical theory is that between "nature" and "art" (φύσις and τέχνη), which is also applied to word-order. The concept of 'natural' word-order, which is discussed in various ancient treatises, can in fact mean different things'. He shows how 'natural' word-order can refer to that which is "usual" or imitates 'the non-professional language of everyday communication'. It can also be understood as the order which most readily follows logical or chronological relationships'. And it can also be used to refer to 'the pragmatic order of

Both Philodemus and Dionysius display how *metathesis* can exert a transformative effect on the text through a reconfiguration of its constituent parts. Philodemus frequently uses *metathesis* to illustrate the disconcerting effect a change in word-order can have on both the composition and content of the text alike. In the *Metamorphoses* this process works in reverse as the reader must rearrange the disconcerting jumble of words with which he is immediately presented. Ovid, however, like Philodemus uses reading-as-rearrangement in the proem to directly align form and content and enact transformation upon the surface of the text.

This process can also be seen in the Homeric scholia, which precisely record instances of reading that involve active rearrangement of the words in order to extrapolate meaning, when the words in a passage have undergone transposition. Levy (1969) shows how one of the methods employed by the Homeric scholiasts to explain complex passages from the *Iliad* to the Greek youth of the Hellenistic period, and by commentators of the Servian corpus explaining the *Aeneid* to Roman students of late Classical times, is to actively rearrange the words in dislocated sentences so that the sentences more readily correspond to unmarked word-order. Passages where the word-order has been rearranged are introduced by the exegetical terms τὸ ἐξῆς in Greek and *ordo* in Latin.²⁰

clear communication'. Dionysius begins with the implicit idea that word-order should follow the logical and chronological relationships that exist in reality (*Comp.* 5); however, as de Jonge shows, he changes this approach following an analysis of word-order in Homer, where Homer does not abide by this notion. De Jonge also analyses Demetrius' 'more pragmatic account of natural word-order' in *On Style* (199-201), where "the topic" (τὸ περὶ οὗ) is mentioned first, and then "what it is" (ὃ τοῦτό ἐστιν). Here clear communication is the primary concern. The author of *On the Sublime* (22.1) shows how hyperbaton, contrary to Dionysius' belief can be part of 'natural' word-order, as he argues that people who experience overwhelming emotion can often mix up the normal order of words, so hyperbaton could prove a 'true' imitation of 'natural' speech. Given that what was considered 'natural' word-order was already debated in antiquity, the terms 'marked' and 'unmarked' will be used for the remainder of this discussion.

²⁰ Levy (1969, 239) identifies four types of rearrangement: the removal of parenthetical material so as to clarify the main utterance; the rearrangement of the poet's original word-order to comply with conventional order; the alteration of word-forms or the very words of

Levy proceeds to give numerous examples, including this from the *Iliad* (7.171-72):²¹

<i>Iliad</i>		A scholiast, τὸ ἐξῆς							
... διαμπερὲς ὅς κε λάχῃσιν·	5	6	7	1	8	2	3	4	
οὗτος γὰρ δὴ ὀνήσει ...	οὗτος γὰρ δὴ διαμπερὲς ὀνήσει, ὅς κε λάχῃσι.								

The A scholiast on *Il.* 7.174 gives as one possible formulation of τὸ ἐξῆς the sequence οὗτος γὰρ δὴ διαμπερὲς ὀνήσει, ὅς κε λάχῃσι. The overall syntax is normalised in terms of the sequence of units. This demonstrates that the process of actively rearranging sentences with dislocated word-order is not just a response of the modern reader but the ancient one as well.²²

2.4 The Primordial Proem

As we have proposed, the transformation that occurs in the textual fabric of the opening line of the proem of the *Metamorphoses* serves to mirror the bodily metamorphoses that will be the subject matter of the text. There is, however, another shift in the opening sentence as fully formed. Throughout the *Metamorphoses*, *corpora* ‘bodies’ are transformed into new *formas* ‘shapes’, not generally the other way around, as the sentence reads.²³ The image of shapes changed into bodies also introduces the theme of cosmogony, of bodies being formed and created that will be the subject of the opening of the first book of the *Metamorphoses*.

The disjointed word-order of the opening sentence may also hint towards the state of the unformed, primordial universe, which Ovid proceeds to describe: he calls it a *rudis indigestaque moles*, a ‘rough and unordered mass’ where the *discordia semina rerum* ‘the discordant seeds of

the poet, with some rearrangement and often with omissions; and a combination of the above, where the word-order remains intact.

²¹ Dickey (2007, 120) also lists a number of examples under the heading of τὸ ἐξῆς.

²² Robinson (1973) discusses the comparable technique of syntactic letter glossing in Medieval Latin manuscripts.

²³ *Corpora* may also hint towards not one but two terms which Lucretius uses for atoms in *De Rerum Natura*: *genitalia corpora* ‘generative bodies’, and *corpora prima* ‘first bodies’ (*prima* also occurs in the line following *corpora* in the proem of the *Met.*). Sedley (1998, 38) provides a useful list of Lucretius’ different terms for atoms.

badly joined together things' are heaped together (1.7-9).²⁴ The universe at the beginning of Ovid's text is one where the elements are jumbled together and continually transform into each other as *nulli sua forma manebat* 'to none did its form remain' (1.18). The creation of the stable universe results from two processes: first unlike elements which had so far been mixed up together (1.17-20) are separated out from each other, before like elements are brought together and bound in position (1.21-25).²⁵ The overall dynamic is one of reconfiguration, as the primordial mass must be first separated into its constituent elements, before these elements are placed in their correct position. In much the same way, the reader must separate the 'sense elements' from the jumbled up word-order of the opening line before reorganizing these elements and fixing them in place; the reader thus forms bodies of meanings through rearranging the initial matter before him on the page.²⁶ A potential source for this idea may be found in Lucretius' *De Rerum Natura*, which may contribute to a reading of the proem as textually displaying universal processes.

3. LANGUAGE AND ATOMIC STRUCTURE

3.1 Lucretius' Alphabet Analogy

In the *De Rerum Natura*, Lucretius uses the analogy of the alphabet to explain the reconfiguration of atomic structure. Lucretius uses the analogy between atoms and letters to account for the fundamental changeability of matter, thus constructing a parallel between transformations in language and

²⁴ Ovid uses yet another of Lucretius' terms for atoms, *semina rerum*. See note above.

²⁵ This passage is quoted and treated at length in the chapter 3 §2.2.

²⁶ The Technopaegnia or 'Pattern Poem' may be seen as the most obvious example of the visual appearance of a poem being made to mirror its content. Technopaegnia were Hellenistic and Latin poems which visually reproduced the subject with which they dealt, through the positioning of words and sentence length. The terms usually refer to six texts transmitted by the *Greek Anthology* and the *Corpus Bucolicorum*, ascribed to Simmias of Rhodes (*Wings, Axe, and Egg*), Theocritus (*Syrinx*), Dosiadas (*'Doric' Altar*), and Besantinus (*'Ionian' Altar*) (Guichard 2006, 83). To this we may add the Latin Laevius' *Phoenix* (Kyriakidis 2010, 10). Kyriakidis referring to *Heroides* 21.81 states that 'it was more than likely that Ovid was fully acquainted with this literary device' (10).

the physical world.²⁷ In this analogy from the *DRN*, changes in the position and sequence of letters between words correspond to the way in which atoms can be reorganized and recombined to form different compounds. The analogy occurs 5 times at *DRN* 1.196-98, 1.814-29, 1.908-14, 2.688-99, and 2.1013-19. Lucretius argues that all things are formed from atoms combined in a limited number of ways, in the same way that the multitude of words in a given language are formed from the letters of the alphabet:

Quin etiam passim nostris in versibus ipsis
multa elementa vides multis communia verbis,
cum tamen inter se versus ac verba necesse est
confiteare alia ex aliis constare elementis;
non quo multa parum communis littera currat
aut nulla inter se duo sint ex omnibus isdem,
sed quia non vulgo paria omnibus omnia constant.
sic aliis in rebus item communia multa
multarum rerum cum sint primordia rerum,²⁸
dissimili tamen inter se consistere summa
possunt; ut merito ex aliis constare feratur
humanum genus et fruges arbustaque laeta.²⁹

For even scattered here in our lines, you can see many letters common to many words; although you must acknowledge both lines

²⁷ Wheeler (1999, 21) states that Ovid is ‘alluding directly’ to Lucretius in the proem, particularly when Ovid calls for his poem to be drawn down *ab origine mundi* ‘from the beginning of the world’ (*Met.* 1.3). This phrase is derived from *DRN* 5.548: *sed pariter prima concepta ab origine mundi* ... ‘But they [the earth and air] were conceived together from the creation of the world ...’. Myers (1994, 6) also observes the allusion and emphasises the ‘intertextual dialogue’ that Ovid is engaged in with the *DRN*, which initially places the *Metamorphoses* ‘within the tradition of “scientific” cosmogonic epic and mythological universal history’.

²⁸ Bailey (1922, OCT) chooses *verum* instead of *rerum*; however, *rerum* is given in the *O* and *Q* manuscripts and is chosen here.

²⁹ Bailey’s 1922 (OCT) edition of the *De Rerum Natura* will be used throughout unless otherwise stated.

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and word are different, being fitted from different letters. Not that there is any lack of letters, common to many words, or that no two words are composed of the very same letters, but only that in general they are not all alike. This analogy is equally applicable to other things: although many objects have many primary elements in common, as aggregates they can differ from one another. So it can be rightly said that the human race and crops and fruitful trees are fitted together from different combinations (2.688-99, tr. adapted Smith 2001).

Lucretius not only invites the reader to imagine the analogy between atomic structure and the formation of words, but also directly refers the reader to the appearance of the words before him on the page. This allows the reader to understand atomic structure by looking at the arrangement of the letters in the words that he is reading. In aligning atomic structure and composition with the alphabet, Lucretius makes tangible the way in which the atoms can be rearranged to form different compounds, allowing for one thing to transform into another.

The parallel is further heightened by the way in which Lucretius uses *elementum* and *littera* as synonyms in this passage.³⁰ In particular the verb *curro* ‘to move quickly’ at 692, encourages the reader to imagine the letters moving about and transferring between words. This is very similar to the process of reading-as-rearrangement which we observed in the opening sentence of the proem of the *Metamorphoses*, where the reader must reposition the words in order to correctly construct the meaning of the sentence, the difference being that Ovid’s primary elements tend to be words rather than letters. Given the abundant indications of Ovid’s reception of Lucretius that will be given throughout this study, it may be argued that Lucretius’ alphabet analogy is influencing the dynamic of the dislocated

³⁰ As Dalzell (1987, 21) states in relation to the alphabet analogy: ‘Atoms combine and recombine in different patterns, just as the letters of the alphabet can be rearranged in different patterns to form different words’. Friedländer (1941) attempts to use the alphabet analogy to argue that Lucretius had an atomic theory of language.

word-order of Ovid's proem. In transforming the 'shape' of the words and repositioning the atoms, Lucretius likewise transforms both words and things into different 'bodies'; indeed *corpora* is one of the words which Lucretius uses to denote the atoms, including in his initial use of the alphabet analogy at *DRN* 1.196.

Lucretius demonstrates the alphabet analogy in action at 1.911-14. Here Lucretius argues against Anaxagoras' notion of ὁμοιομέρεια, that things are composed of miniature particle versions of themselves. Lucretius gives the example of how forest fires occur from the friction of trees rubbing against each other to demonstrate how the atoms which constitute a given thing have no direct relationship with the thing they compose and so can readily be recombined to form something different.³¹ The friction causes the atoms to be rearranged, so that the tree is transformed into fire through atomic reorganization. Lucretius illustrates this point using the alphabet analogy:

atque eadem paulo inter se mutata creare
ignis et lignum? quo pacto verba quoque ipsa
inter se paulo mutatis sunt elementis,
cum ligna atque ignis distincta voce notemus.

And [do you see] that these same (atoms) by a small change between each other can make both fires [*ignis*] and wood [*lignum*]. In the same way the words themselves consist of mutual letters a little changed when we say fire [*ignis*] and wood [*ligna*] with distinct sound (1.911-14, tr. adapted Smith 2001).

Through the interchange of a number of letters we can easily make *ignis* from *lignum*.³² In the same way, through reorganizing the structure of the

³¹ Dalzell (1987, 21) argues that the above passage from Lucretius is designed to counteract the Empedoclean idea that everything was produced from the four elements.

³² Hendren (2012, 415) interprets the type of word-play which we see in *ignis lignum* as demonstrating an attempt by Lucretius to integrate atomic and weaving patterns into the

atoms the thing which they form can be completely transformed. As in the proem of *Metamorphoses*, by rearranging the constituent elements, one thing can transform into another, so a tree can change into fire.³³

3.2 Wordplay and Wit in the *Metamorphoses*

Ovid also suggests a link between *ignis* and *lignum* in book 8 of the *Metamorphoses*. When Meleager is being born to Althaea, the fates profess that he will only live as long as the log which is burning in the fire: ‘*tempora*’ *dixerunt* ‘*eadem lignoque tibi*que, / *o modo nate damus*’ “‘the same time” they said “oh newly born, we give to the wood and you” (8.454-55). The fate of the new born (*natus*) is thus equated with the burning log (*lignum*). Althaea snatches the log from the flames to save her son; however, when Meleager grows up and kills his uncles, his mother holds the log (*lignum*) in the fire (*ignis*) in order to destroy her son (8.477-79). Ovid’s word play on *ignis* and *lignum*, may well also be an allusion to

alliterative structure of the verse: ‘Lucretius employs a metapoetic device whereby the arrangement of atoms is reflected in his own alliterative arrangement of letters’. Hendren (416-17) proceeds to identify a number of instances where Lucretius employs this technique: in line 333 of *DRN* 2, *nunc age, iam deinceps cunctarum exordia rerum*, Hendren identifies the pattern *m-d-nc-c-nc-t-m* (iaM DeiNCeps CuNCTaruM), which creates ‘a colliteration in the pattern ABCDCBA’. While the observation that Lucretius is using alliteration when describing atoms is important, it is difficult to follow Hendren’s attribution to Lucretius of the deliberate creation of such complex alliterative patterns. Hendren appears to be arguing in a similar vein to Saussure and his theory of anagrams, which Saussure applied to Latin poetry and Lucretius in particular. Wunderli (2004) discusses the successes and failings in Saussure’s anagram theory.

³³ In Lucretius’ second use of the alphabet analogy at 1.814-29 we get a clear picture of the relevance his atomic theory has for the universe at large. Before stating again the alphabet analogy he says that because of the atoms ability to be combined in different ways, very different things are composed from the same atoms: *namque eadem caelum mare terras flumina solem / constituunt, eadem fruges arbusta animantis, / verum aliis alioque modo commixta moventur* ‘for the same atoms compose sky, sea, lands, rivers and sun, the same compose crops, trees and animals, and truly with others, by some manner they are intermingled and are moved’ (1.820-22).

Lucretius' use of these terms in the alphabet analogy from *DRN* 1.911-14 (above).³⁴

Ovid frequently uses word-play comparable to Lucretius' use of *ignis* and *lignum* in the alphabet analogy in the *DRN*. One of the clearest examples of this can be seen in *Tristia* 3.1, where the poem laments its author's exile, drawing attention to the tears which stain the work:

littera suffusas quod habet maculosa litturas,
laesit opus lacrimis ipse poeta suum.

The blotched letters have smears poured over them because the poet himself has injured his own work with his tears (*Tristia* 3.1.15-16).

The tears of the poet have stained the work in such a way as to smudge the letters. This operates metatextually as the tears cause *littera* to become *litturas*; the words can easily be mistaken for each other through the smearing of their letters.³⁵ The dynamic is similar to Lucretius' alphabet analogy as an exchange in letters causes a transformation of substance.³⁶

³⁴ Varro in *De Lingua Latina* (5.70) gives the etymology of *ignis* from *gnasci*: *ignis a gnascendo, quod hinc nascitur et omne quod nascitur ignis succendit* 'fire comes from *gnasci*, because from it there is birth and fire kindles everything that is born'. A collocation of *ignis* and *lignum* also occurs in Pliny's *Natural History* (16.208): *teritur ergo lignum ligno ignemque concipit adtritu, excipiente materie aridi fomitis* 'therefore one piece of wood is rubbed with another and fire takes hold from the friction'.

³⁵ Hardie (2002a, 109) states that 'these blots, *litturae*, threaten the verbal communicative power of *litterae*, but convey an even more powerful non-verbal message... On a page blotted with tears it might not be possible to distinguish between the words LITTERA and LITURA'.

³⁶ Etymology marks another site where we can see Ovid constructing a parallel between linguistic and material form. For a further discussion of this topic in relation to the etymology of Janus, see chapter 5 §3.2. Tissol (1997, 18-19) illustrates how Ovid closely connects metamorphosis and wordplay. In particular he draws attention to Ovid's use of the rhetorical trope, syllepsis. He states that Ovid's most conspicuous usage of this can be seen in his joining of literal and figurative meanings, where both the literal and figurative meaning of a word can operate simultaneously in the same phrase. A full treatment of this

4. THE ELEMENTS OF LANGUAGE IN PLATO

The following section will discuss a number of further analogies between the universe and the text in Greek philosophical literature. The texts treated in this section will provide further possible background to Ovid's mirroring of universal and textual structures in the *Metamorphoses*, as well as Lucretius' alphabet analogy. In order to examine Lucretius' alphabet analogy further and its bearing on the *Metamorphoses*, it is necessary to interrogate the vocabulary that Lucretius uses to illustrate the relationship between linguistic and atomic structure, and in particular his polysemous use of the term *elementum* for 'atom' and 'letter'. A possible antecedent may be seen in the *Theaetetus*, *Cratylus* and *Timaeus*, where Plato appears to use the term στοιχεῖον to denote both a primary physical constituent of matter and a letter in the alphabet.

4.1 Stoicheia

The LSJ indicates that the term στοιχεῖον by the time of Plato could denote a variety of different things depending on the context in which it was used: (1) in language, it could refer to a simple sound of speech or the first component of a syllable, such as a letter of the alphabet (or its corresponding phoneme);³⁷ (2) in physics, it generally refers to the primary component into which matter is ultimately divisible;³⁸ (3) in argumentation,

topic is beyond the scope of this work. Nelis (2006) and Feeney and Nelis (2005) identify similar types of wordplay, including acrostics, in Vergil.

³⁷ στοιχεῖον is used to denote a letter in Plato (*Cra.* 424d; 426d; *Th.* 202e) and in Aristotle (*Poet.* 1456b22; *Metaph.* 998a23). These passages are discussed further below in this section.

³⁸ Plato uses it as a term to denote a primary physical element (*Th.* 201e; *Plt.* 278d; *Ti.* 48b) as does Aristotle (*Gen. Corr.* 314a29; *Metaph.* 998a28). Aristotle (*Metaph.* 985a32) says that Empedocles was the first to use the term στοιχεῖον to refer to a physical element, such as earth, water, air or fire. Empedocles, however, is not seen to use this term to denote the elements in any of the surviving fragments. Crowley (2005, 367) noting how Empedocles does not use this term for the elements, but instead calls them the ῥιζώματα 'roots of all things', states that the use of the term στοιχεῖον in the sense of element is usually believed to be a later innovation. I see no reason, however, why Empedocles could not have used more than one term to denote the elements and why Aristotle could not have

it is frequently used to denote the basic stipulations in general reasoning, or a fundamental principle.³⁹ Each instantiation would appear to show that στοιχεῖον can be employed in a variety of different contexts as a term for an indivisible constituent which is part of a countable set. Wigodsky (2007, 525-26) states that etymologically a στοιχεῖον is a unit in row (στοῖχος) in an ascending series. Herodotus, describing the construction of a pyramid, uses στοῖχος to refer to the first ‘course’ of steps which make the base of the pyramid.⁴⁰ This supports the argument that στοιχεῖα can refer to any form of primary constituents which are built together to make a whole. In the case of language, the στοιχεῖα are the letters which go to compose a syllable, word or sentence; in physics, they are the primary components such as atoms which form material compounds; while in argumentative discourse they are the basic stipulations and principles which are built into a cohesive argument. στοιχεῖον appears to contain the implicit notion of the construction of a series made up of individual parts which ultimately form something complete and unique.⁴¹

been referring to a portion of Empedocles’ text that is not extant. According to Eudemus (ap. Simplicius *In Phys.* 7.13), Plato was the first to use στοιχεῖον for the four Empedoclean elements. Crowley (2005, 367-68), however, argues that Plato’s use of στοιχεῖον to denote a fundamental constituent of matter is adopted from the Atomists or the Pythagoreans. Crowley points to Simplicius (*In Phys.* 154.14), who states that Anaximander called the elements *σωματικὰ στοιχεῖα*.

³⁹ Aristotle (*Metaph.* 1014b1) uses it to denote the primary component of an argument or demonstration, while Xenophon (*Mem.* 2.1.1) uses it to for an elementary or fundamental principle. Wigodsky (2007, 525) also considers the use of the term in mathematics: Proclus, *In Euc.* 72.23 ff. cites Eudoxus’ student Menaechmus as distinguishing two meanings of στοιχεῖον, as a ‘common postulate’ and ‘any theorem used to prove another’. στοιχεῖον is later used by Manetho (4.624) for the stars and Diogenes Laertius (6.102) as a sign of the zodiac. The scholia on Dionysius Thrax discuss the etymological connection with Zeus’ title Στοιχαδεύς.

⁴⁰ It is similarly used of a file of persons or soldiers marching in a procession (Ar. *Eccl.* 756), mathematical factors (Arist. *Metaph.* 1092b34), as well as a row of columns or verses (LSJ).

⁴¹ Aristophanes (*Eccl.* 652), however, uses στοιχεῖον to refer to the shadow of the gnomon of a sundial. This is difficult to resolve in relation to the theory set out above. The shadow of the gnomon could be interpreted as a single instance in which a shadow is cast, with the

Plato's use of στοιχεῖον in the *Cratylus* appears to confirm the argument set out above. If we trace Socrates' use of στοιχεῖον throughout the *Cratylus*, it becomes apparent that Socrates continually uses it to refer to slightly different things. At 393d6-e8 στοιχεῖον is interchangeable with γράμμα and unambiguously refers to a letter of the alphabet. At 422a1-b4, however, it is used to denote a word or a name incapable of further resolution. Socrates gives the etymology of ἀγαθός, which he says is derived from a combination of ἀγαστός and θοός; in other words ἀγαθός may be resolved into its constituent elements ἀγαστός and θοός. He says that these words too, ἀγαστός and θοός, may also be derived from further divisions. When a word cannot be resolved further it is deemed a primary constituent and this he terms a στοιχεῖον. At 424c1 στοιχεῖον is used of a primary sound, such as a note on the scale, while συλλαβή, which Socrates frequently groups with γράμμα or στοιχεῖον when denoting a complex of letters, is used here of a compound of notes, presumably a chord or scale. At 434a4 στοιχεῖον is used again as the primary constituent of a word before almost immediately being used to denote a primary constituent of matter (434b4-7), once more drawing the analogy between the building blocks of language and those of physical reality.

We can deduce from the above examples that for Plato at least, στοιχεῖον was first and foremost an undifferentiated term for any type of primary constituent, which could easily be applied to different fields and ideas. This appears to operate unambiguously in the *Cratylus*. Complementary evidence may be derived from Aristotle's *Metaphysics* (1014a-b). Here Aristotle states that: στοιχεῖον λέγεται ἐξ οὗ σύγκειται πρώτου ἐνυπάρχοντος ἀδιαιρέτου τῷ εἶδει εἰς ἕτερον εἶδος 'στοιχεῖον means the primary intrinsic component of something, not being formally divisible into some other species of thing' (a26, tr. Lawson-Tancred 1998). He proceeds to show how the fundamental notion is of indivisibility and gives as examples primary elements of sound, the indivisible constituents of bodies, geometrical figures, primary components of demonstrations, and

combination of each shadow cast from the gnomon from each moment in time completing a temporal spectrum.

metaphorically, any small unity which is useful for various purposes (1014a26-b15).

4.2 Socrates' Polysemous use of *Stoicheia* in the *Theaetetus*

In the *Theaetetus*, however, Socrates utilizes this cross-applicability to generate confusion and undermine our ability to take the basic meaning of any word for granted, while more directly using *στοιχεῖον* to compare letters with the primary constituents of matter. In the *Theaetetus*, Socrates responds to Theaetetus' statement that true judgment with an account (*logos*) is the equivalent of knowledge by recalling a dream in which he heard people discussing the form of the primary elements:

... ἐγὼ γὰρ αὖ ἐδόκουν ἀκούειν τινῶν ὅτι τὰ μὲν πρῶτα οἰόνπερ εἰ
στοιχεῖα, ἐξ ὧν ἡμεῖς τε συγκείμεθα καὶ τᾶλλα, λόγον οὐκ ἔχοι.⁴²

... I dreamt that I heard some people say that the first things just like
stoicheia out of which we and everything else are composed, do not
have a *logos* (201d8-e2)

In this context *στοιχεῖον* appears to be referring to the primary constituents of physical bodies. It is not until a little later in the dialogue that it becomes clear that Socrates is actually referring to the letters of writing (*τὰ τῶν γραμμάτων στοιχεῖα*) (202e6), which he recalls people comparing to 'first things' (*τὰ πρῶτα*).

At 202e3-4, he suddenly says that he has been using a *παράδειγμα* 'a schema', 'example' or 'model', and when Theaetetus questions what he is referring to, Socrates replies: *τὰ τῶν γραμμάτων στοιχεῖά τε καὶ συλλαβάς. ἢ οἶει ἄλλοσέ ποι βλέποντα ταῦτα εἰπεῖν τὸν εἰπόντα ἃ λέγομεν*; 'The *stoicheia* of writing and syllables. What else do you think the author of this theory was referring to?' (202e6-7, tr. adapted Waterfield, 2004). This suggests that Socrates deliberately wants both Theaetetus and the reader to assume that he is using *στοιχεῖον* in the sense of primary physical

⁴² All displayed quotations from the *Cratylus* and *Theaetetus* follow the OCT of Duke, E. A. et al. (1995).

constituent, before stating at the end of his explanation that he had actually been using it to mean a letter in the alphabet all along. If this is the case, it would appear that Socrates is deliberately using this polysemy to point to the inherent instability and semantic ambiguity of the language which he is using; an instability that, if we follow the analogy comparing letters to the constituents of matter, must be applied to the composition of physical reality as well.

Socrates continues to draw out the analogy between letters and the primary constituents of matter, stating that the way in which letters constitute words or syllables is the same in which words constitute an account (*logos*):

... τὰ δὲ ἐκ τούτων ἤδη συγκείμενα, ὥσπερ αὐτὰ πέπλεκται, οὕτω καὶ τὰ ὀνόματα αὐτῶν συμπλακέντα λόγον γεγονέναι· ὀνομάτων γὰρ συμπλοκὴν εἶναι λόγου οὐσίαν.

... And while they [the names] are composed of these [*stoicheia*], just as they [the *stoicheia*] intertwine, so too the names are intertwined to become a *logos*, for the intertwining of names is the substance of a *logos* (202b3-6).

More and more complex compounds are formed, as words and syllables are joined into sentences and accounts; the letters and words are platted or woven (*συμπλέκειν*) together to form words and accounts respectively.⁴³ Socrates goes on in the *Theaetetus* to counter this theory, which compares the elements to letters, and instead presents a nuanced argument that

⁴³ Plato uses the term *συμπλέκειν* to depict the weaving of the weft and warp in the *Statesman* (309b). This passage from the *Theaetetus* indicates the conceptual closeness of these two ideas for Plato, as both the alphabet analogy and weaving illustration involve the binding of individual constituents to form compounds, both in terms of the constitution of bodies and arguments. Plato's use of the weaving motif is discussed further in chapter 2 §4.

knowledge of each individual constituent is required to reach a *logos* of the whole thing.⁴⁴

4.3 *Elements and Syllables in the Timaeus*

In Plato's *Timaeus*, Timaeus, arguing along similar lines, criticizes theories which give an account of the formation of the universe before the physical elements which make up the universe are properly understood:

τὴν δὴ πρὸ τῆς οὐρανοῦ γενέσεως πυρὸς ὕδατος τε καὶ ἀέρος καὶ γῆς φύσιν θεατέον αὐτὴν καὶ τὰ πρὸ τούτου πάθη· νῦν γὰρ οὐδεὶς ποῦ γένεσιν αὐτῶν μεμήνυκεν, ἀλλ' ὡς εἰδόσιν πῦρ ὅτι ποτέ ἐστιν καὶ ἕκαστον αὐτῶν λέγομεν ἀρχὰς αὐτὰ τιθέμενοι στοιχεῖα τοῦ παντός, προσῆκον αὐτοῖς οὐδ' ἂν ὡς ἐν συλλαβῆς εἶδεσιν μόνον εἰκότως ὑπὸ τοῦ καὶ βραχὺ φρονοῦντος ἀπεικασθῆναι.⁴⁵

One must see the nature of fire, water, air and earth before the origin of the universe and what happened before them; so far nobody has shown the origin of them, but as if knowing what fire and each of the others are, we say they are foundations, placing them as *stoicheion* of everything, coming to them with little understanding as if they could even be compared to the forms of the *syllabē* (48b3-c2, tr. adapted from Crowley 2005 and Cornford 1935/1997).

Here Timaeus criticizes those who easily compare the elements to *στοιχεῖα* and believe that the elements of fire, air, water and earth are the primary constituents or origin of all things. More specifically than in the *Theaetetus*, Timaeus here is critiquing the four element theory of Empedocles. Indeed he states that the elements are so far removed from being *στοιχεῖα* that they cannot even be compared to basic compounds such as the *συλλαβή*. The question, here is whether *στοιχεῖα* in this context also implies an association

⁴⁴ Socrates argues against the theory comparing primary constituents to letters because he states this would presume that the primary elements are unknowable and only basic compounds such as syllables can be perceived.

⁴⁵ All displayed quotations from the *Timaeus* follow Burnet' OCT (1963).

with ‘letters’ or other linguistic constituents. As Crowley (2005, 380) states, συλλαβή has obvious grammatical or alphabetical connotations. We have seen in the *Cratylus* and *Theaetetus*, when paired with στοιχεῖον, συλλαβή can denote any type of compound that is formed of primary constituents; however, more so than στοιχεῖον, it readily refers to an element of speech. Crowley (2005, 380) shows how when συλλαβή appears in a non grammatical context in Plato, it is being used metaphorically. This would suggest that in the *Timaeus* there is an implicit reference to an analogy comparing primary constituents to letters and compounds of these constituents to syllables.⁴⁶

4.4 *Elementa in the DRN*

In the *DRN*, Lucretius uses the term *elementum* in his alphabet analogy in a very similar way to how Plato uses στοιχεῖον in the examples from the *Cratylus*, *Theaetetus* and *Timaeus* that we have seen above. This could suggest that Lucretius is drawing from Plato or from the same tradition. Both Plato and Lucretius use these respective terms in a way that presupposes that the reader will think of both the grammatical and physical aspects of στοιχεῖον and *elementum* when read in the context of the above analogies; hence our tendency to translate both terms as ‘letter/element’.⁴⁷ Wigodsky (2007, 526) states that ‘*elementum* did become the standard translation for στοιχεῖον, when applied to the Empedoclean elements, once this usage had been introduced by Cicero (*Acad.* 126.9-13);⁴⁸ but it does not

⁴⁶ A complementary interpretation may come from Longinus. Armstrong (1995, 224) notes how Longinus ap. Proclus *In Timaeum* 42 states that atoms can no more form a cosmos by themselves than various words and expressions can form a speech.

⁴⁷ Diels (1899) already identified the connection between στοιχεῖον and *elementum*; however, Wigodsky (2007, 524) and Burkert (1959) show that Diels took this too far by arguing that ‘letter’ was the first and primary meaning of both terms.

⁴⁸ Cicero in the *Academica* (1.26.9-13) says that *elementum* is a translation of στοιχεῖον: *itaque aer (hoc quoque utimur enim pro Latino) et ignis et aqua et terra prima sunt; ex his autem ortae animantium formae earumque rerum quae gignuntur e terra. ergo illa initia et ut e Graeco vertam elementa dicuntur.* ‘so *aer* [air] (which we also now use in Latin) and fire and water and earth are primary; from these arise the forms of living beings and those

necessarily follow that Lucretius, writing a decade earlier and using the word in a different sense, was translating the same Greek word for letter'. Lucretius is in fact not only using *elementum* in a remarkably similar fashion to how Plato uses στοιχεῖον, but, like in the passage from the *Timaeus* (48b3-c2 above), Lucretius is also specifically critiquing the four element system of Empedocles, reinstating the atom as the primary constituent of physical bodies instead of Empedocles' elements.

If we accept Wigodsky's reappraisal of the meaning of στοιχεῖον (above), this further reinforces the view that Lucretius is responding to a text or set of texts closely linked to the *Theaetetus* and, more specifically, the *Timaeus*.⁴⁹ If 'a letter of the alphabet' is taken as a nuanced instantiation of the meanings of both στοιχεῖον and *elementum*, rather than this being the primary sense of either noun at any given time, this only goes to strengthen the connection between Lucretius' and Plato's use of these words in a similar sense and context. On this ground it can be argued that Lucretius' use of *elementum*, at least in the context of the alphabet analogy, may be read as a translation of στοιχεῖον as used by Plato in the passages from the *Theaetetus* and *Timaeus*.

4.5 Atomic Theory in Epicurus

As will be further discussed below, Lucretius at *DRN* 1.782-914 appears to replicate Epicurus' argument against the *Timaeus* in book 14 of *On Nature*. *On Nature* may have provided the conduit to Lucretius' alphabet analogy of that which we find in Plato.⁵⁰ Wigodsky shows how στοιχεῖον appeared three times at the end of book 14 of *On Nature*, particularly in the context of changes in the mixture of the elements and the shapes of compounds. Wigodsky reconstructs 14.29.22-23 as follows:

things which are born from the earth. Therefore they are beginnings and so translating from Greek they are called *elementa*' (tr. adapted Brittain 2006).

⁴⁹ For arguments concerning the connections between the *Timaeus*, the *DRN*, and Epicurus' *On Nature*, see chapter 4 §2.3.

⁵⁰ Sedley (1998, 106) compares *Nat.* 14 with *Tim.* 31b-32c.

For the latter are mistaken about the elements (10-11, τοῖς μὲν [στ]οιχείο[ι]ς ἀμαρτάνουσιν), but in speaking thus, and certainly in asserting the difference/change (παραλλαγὴν) in the mixtures they would be saying something more consistent with these (elements)... (We can agree that some of the atomic) shapes (found in) the other elements (correspond) to these shapes of them which are apparent (1-3, [σ]χημάτων τοῖ[ς] λοιποῖς στοιχείοις κατὰ τὰ φαινόμεν' αὐτῶν εἶδη ταυτεῖ).

Epicurus here is stating that the four elements cannot account for the diversity of physical bodies and that a body can be divided into any number of shapes, not only the regular solids and triangles of the *Timaeus* (Wigodsky 2007, 526-27). Since the elements are formed from a mixture of smaller particles, which are present in differing degrees in each element, the elements cannot be primary constituents.

Book 15 of *On Nature* continues with a critique of Anaxagoras, and as Sedley (1998, 124) shows, it potentially contains a discussion on atomic rearrangement (fr. 14 of book 15): τὴν πα[ραλ]λαγῆ[ν] τῶν ἀ[τ]όμων 'the alternation of the atoms'. If we follow Sedley's (1998, 126) reconstruction of the sequence of arguments in books 14 and 15 of *On Nature* this neatly maps onto the sequence in *DRN* 1.782-914. Lucretius likewise begins with a critique of how the elements are considered to be continually in the process of transforming into each other, as set out in the *Timaeus*, before moving on to a critique of Anaxagoras. The elements are likewise replaced with the atoms as primary constituents and crucially all this culminates with an alphabet analogy at 1.897-914. This could suggest that *On Nature* exerted some influence on Lucretius' construction of the alphabet analogy and also further strengthens the link between the *DRN* and the *Timaeus*.

4.6 The Alphabet Analogy in the Atomists

Lucretius presents another version of the alphabet analogy at *DRN* 2.1013-19, where he states that the same letters denote sky, sea, lands, rivers and sun. After the analogy, he says that if there is any change in the atomic

structure then the thing which the atoms constitute must also undergo change:

concursum motus ordo positura figuræ
cum permutantur, mutari res quoque debent.

When the combination, movement, order, positions or shapes are changed completely, the things themselves must also be transformed (2.1021-22).

This passage may provide us with a hint as to a further possible source for the alphabet analogy. Lucretius at this point is probably drawing from Democritus and Leucippus (Dalzell 1987, 24; 28n.6). Aristotle, in the *Metaphysics* (985b 4-22 = Leucippus and Democritus fr. 46, Taylor), recalls the three differences that can occur to atomic structure, which Democritus and Leucippus said dictate the formation and composition of matter: ταύτας μέντοι τρεῖς εἶναι λέγουσι, σχῆμά τε καὶ τάξιν καὶ θέσιν: ‘they say that these [differences] are three—shape, arrangement and position’ (985b 13-14). Democritus and Leucippus illustrated how these changes can occur in the atomic structure by using the letters of the text as they appear to the reader: διαφέρει γὰρ τὸ μὲν Α τοῦ Ν σχήματι τὸ δὲ ΑΝ τοῦ ΝΑ τάξει τὸ δὲ Ν τοῦ Ζ θέσει ‘for A differs from N in shape, AN from NA in arrangement, N from Z in position’ (*Metaphysics* 985b 17-19). This presents an analogy between letters and atoms, which, like Lucretius’ analogy, uses the transposition and alteration of the letters to display the transformation that can result from a shift in atomic structure. The three differences, shape, arrangement and position, correspond directly to the *ordo positura figura* ‘order, position, shape’ that we find in the *DRN*; however, Lucretius inserts two further changes *concursum* ‘combination’ and *motus* ‘movement’.

Democritus and Leucippus also used letter rearrangement to illustrate how even the smallest change in atomic structure can result in a wholesale transformation of the object which the atoms constitute. Aristotle summarizes this notion of Democritus and Leucippus as follows:

Ἐπεὶ δ' ὄντο τάληθες ἐν τῷ φαίνεσθαι, ἐναντία δὲ καὶ ἄπειρα τὰ φαινόμενα, τὰ σχήματα ἄπειρα ἐποίησαν, ὥστε ταῖς μεταβολαῖς τοῦ συγκειμένου τὸ αὐτὸ ἐναντίον δοκεῖν ἄλλω καὶ ἄλλω, καὶ μετακινεῖσθαι μικροῦ ἐμμικρομένου καὶ ὅλως ἕτερον φαίνεσθαι ἐνὸς μετακινήθεντος· ἐκ τῶν αὐτῶν γὰρ τραγωδία καὶ κωμωδία γίνεται γραμμάτων.

And since they thought that the truth was in appearance, and the appearances were contrary and infinite, they made the shapes infinite, so that through changes in the compound the same thing appears opposite to one person and another, and varies as the result of a small additional ingredient and appears wholly different through the variation of a single constituent. For tragedy and comedy both come to be from the same letters (*De Generatione et Corruptione* 315b9-15 = fr. 42a Taylor, tr. adapted following Barnes 1984).

Aristotle states that the Atomists believed that changes in atomic structure can result in the transformation from one thing into another, as even the exchange or transposition of a single constituent can drastically alter the makeup of the object. The idea works the same as the alphabet analogy in the *DRN*. The atoms are once more compared to letters; however, here a minor change in the organization of the letters not only results in the transformation of one word into another but can affect the entire text and dictate which dramatic genre it belongs to. This is generally taken to mean that Tragedies and Comedies are composed of the same letters and words, and a text can shift from one mode to another through their transposition.⁵¹

⁵¹ West (1969), however, argues for an emendation to the above section from *De Generatione et Corruptione*, which would alter our interpretation. He argues that at 315b 15 κωμωδία should be substituted by τραγωδία, a word used by Aristophanes as an equivalent for κωμωδία, so that the sentence should read τραγωδία καὶ τραγωδία. He also states that πλὴν ἐνός should be added after γίνεται γραμμάτων. The evidence for West's interpretation is weak and is based on the fact that τραγωδία is glossed by κωμωδία in the scholia on Aristophanes, and West says that κωμωδία could have replaced τραγωδία in Aristotle's

This dynamic shares a striking affinity with how Ovid begins both the *Metamorphoses* and in particular the *Amores*, when Cupid steals the final foot of the second hexameter, causing the poem to transform from epic to elegy (§ 1.1 above), as the loss of a single syllabic constituent instigate a wholesale transformation.

This comparison with Aristotle's *De Generatione et Corruptione* shows how the reading-as-rearrangement dynamic of the proem is looking towards key passages in philosophical texts which use the reorganization of the text's constituents to illustrate the mutability of the physical world. In terms of our taxonomy of intertextual categories, this corresponds to (14), where a prevalent idea from the *Wider Tradition*, in this case from philosophical literature, appears in the *Metamorphoses*; however, the connections we have observed at times verge on (11), where a number of these philosophical passages may have provided a *Model* for Ovid's reading-as-rearrangement dynamic and his aligning of textual and universal structures with each other.

4.7 The Stoic Counterargument

Lucretius' use of the alphabet analogy in the *DRN* presupposes that atoms behave in a generally random fashion dictated by undirected forces. Chance collisions result in the generation of different compounds as the

text. West bases his argument for this emendation on Lucretius' alphabet analogy, stating that in Aristotle's text 'the illustration must [also] consist of a word in which the change of a single letter produces a strikingly different meaning'. So instead of a Tragedy becoming a Comedy from the rearrangement of its words, the word for Tragedy, τραγωδία, can become the word for Comedy, κωμωδία, through the exchange of a single letter. West's overall argument does not wholly depend on his proposed emendation; τραγωδία and κωμωδία share enough letters in common to illustrate the analogy, at least by the standards set by Lucretius' *ignis et lignum*. West's interpretation that Aristotle is referring to a change in the words for Tragedy and Comedy need not exclude our initial interpretation that Aristotle is also referring to a change in dramatic genre or a transformation from one text to another. Aristotle's choice to use two terms for different dramatic genres in an illustration that depends on the reader visualizing letter or word rearrangement must at least implicitly refer to the transformation between genres or between a Tragedy and a Comedy. If West is correct then it would appear more likely that the analogy as presented by Aristotle is designed to function on both levels.

atomic structure shifts like letters switching and forming different words. Campbell (2003, 98) summarizes this as follows: ‘Given a large enough supply of atoms and a long enough time, it is inevitable that enough fruitful collisions will take place to produce the atomic compounds that will eventually form the world’. The process is only governed by the number of possible atomic combinations, just as a relatively small number of letters can give rise to an enormous yet still limited number of words. The Stoics presented numerous counterarguments to this particular notion of an anti-teleological universe, ultimately dictated by what they deemed as random and chaotic forces.

The Stoic Balbus in Cicero’s *De Natura Deorum* (2.120-53) stresses how intelligent design is omnipresent in nature and the universe. The alphabet analogy, of which we have seen an example in Lucretius, is turned against itself on the basis that a text cannot be formed from the random combination of letters and words, just as a universe cannot be formed from the chaotic collision of atoms. Balbus in Cicero’s *DND* voices this objection as follows:

Hic ego non mirer esse quemquam qui sibi persuadeat corpora quaedam solida atque individua vi et gravitate ferri mundumque effici ornatissimum et pulcherrimum ex eorum corporum concursione fortuita? hoc qui existimat fieri potuisse, non intellego cur non idem putet, si innumerabiles unius et viginti formae litterarum vel aureae vel qualeslibet aliquo coiciantur, posse ex iis in terram excussis Annales Enni ut deinceps legi possint effici; quod nescio an ne in uno quidem versu possit tantum valere fortuna.⁵²

I cannot but express astonishment at this, that anyone could convince himself that certain solid, indivisible bodies are borne along by their thrust and weight, and that from the chance collision of these bodies

⁵² Displayed quotations from the book 1 of the *De Natura Deorum* follow Dyck’s 2003 Cambridge commentary of book 1, while quotations from books 2 and 3 follow Pease’s 1958 edition.

is created a universe supremely embellished and beautiful. I do not understand why the person that thinks this does not also suppose that if countless numbers of the twenty-one letters of the alphabet, fashioned in gold or in some other substance, were thrown into the same receptacle and then shaken out upon the ground, they could form the *Annals* of Ennius made immediately readable before our eyes. Yet I doubt if as much as a single line could be so assembled by chance (2.93 tr. adapted Walsh 1998).

Balbus specifically makes his argument against Epicurean physics, stating that a universe cannot be created by atoms which move about through their own volition colliding with each other and randomly forming compounds. He uses his own version of the alphabet analogy to prove this very point: it would be the same as believing that a countless number of individual letters randomly tossed upon the ground could form Ennius' *Annals*.⁵³ Balbus constructs a direct alignment between the text and the universe, as he pictures the text as a receptacle within which words like atoms are randomly mixed together before being tossed upon the ground. He states that the world that takes form through Epicurean physics is the equivalent of verbal chaos, namely a text made up of letters thrown indiscriminately together.⁵⁴

4.8 *Physics and the Proem*

As we shall see in the following chapters, Ovid's description of the formation of the universe integrates various elements from both Lucretian physics and Stoic intelligent design. We have also seen in §2.4 (above) how a number of aspects of Ovid's depiction of the primordial universe are mirrored in the dislocated word-order of the proem and in particular how the jumble of words which the reader is confronted with when reading the proem must be first distinguished into its constituent parts before they are

⁵³ The composition date of 45 BC for the *De Natura Deorum* places it firmly after Lucretius' death.

⁵⁴As Armstrong (1995, 211) states, by implication the alphabet analogy as used by Balbus 'makes the writer that arranges and combines these elements into a coherent speech a godlike figure, an analogue of the Demiurge'.

rearranged in the ‘correct order’ in order to generate meaning. Similarly the chaotic mixture of elements which comprise the primordial universe must first be separated from each other before they can be placed in their correct position through the formation of the cosmos. When we consider this alignment between the form and content of the text in relation to Lucretius’ alphabet analogy, or even more so in relation to Balbus’ analogy above, it becomes apparent that Ovid’s mirroring of the text and universe stems from the frequent alignment of textual and universal composition as repeatedly presented in philosophical discourse.⁵⁵ This contributes to our interpretation that Ovid is aligning the structure and form of his text with the universe which it describes. It suggests that this alignment may well have had its origin in the philosophical texts which prefigure the cosmological opening of the *Metamorphoses*. As we have stated above in relation to our taxonomy of intertextual categories, this corresponds with (14), the influence of the *Wider Tradition*, and (11) the use of a *Model* or framework. When we begin, however, to compare key passages from Cicero and Lucretius with the proem of the *Metamorphoses*, we are more likely to be dealing with either (2) *Direct Allusion* or (10) *Direct Influence*.

As we have seen in §2.3, Philodemus may have exerted a significant influence (10) on Ovid’s aligning of textual and universal processes in the proem. Armstrong (1995) argues that Philodemus shared a similar attitude to Lucretius on atomic and linguistic structure. We have argued that Philodemus’ portrayal of the interrelation of poetic subject and form, as well as his use of *metathesis*, is comparable to the *Metamorphoses*, particularly the proem. One of the differences between the reading-as-rearrangement

⁵⁵ Volk (2009, 195) argues that the same dynamic is at play in Manilius’ *Astronomica*, where Manilius ‘stresses the parallel between his song and his subject matter, beginning with his simultaneous worship at the altars of *carmen* and *res* in 1.21–2’. While Volk states that Manilius never explicitly presents an alphabet analogy, she points to the passage where Manilius describes himself as an elementary school teacher ‘who first teaches his students the single letters before proceeding to the study of syllables, words, sentences, and finally works of poetry’. If we follow Volk’s argument this could provide us with complementary evidence of another poet, following on from Ovid who ‘implicitly presents the universe as a (poetic) text and, conversely, his text as a small universe’ (Volk 2009, 195).

dynamic of the proem and the alphabet analogy of Lucretius is that Ovid presents transformation through the transposition of words rather than letters. Armstrong (1995) suggests that Philodemus may well have had a theory akin to Lucretius' alphabet analogy, which used the *metathesis* of words rather than the transposition of letters.⁵⁶ This could suggest another link in the chain of influence connecting Lucretius' alphabet analogy and the reading-as-rearrangement dynamic of the proem.

4.9 Cratylus and Pythagoras: Lost for Words

Our analysis of the shift in meaning which takes place in the opening line of the *Metamorphoses* has shown how Ovid displays the first transformation of his poem in the text's linguistic structure, immediately generating a parallel between corporeal and textual form. A similar dynamic may also be observed in book 15 of the *Metamorphoses* where Pythagoras illustrates the mutability present in language itself. Pythagoras describes the transformation of the elements as follows: *Haec quoque non perstant, quae nos elementa vocamus* 'these things are not stable which we call *elementa*' (15.237). Given Ovid's likely familiarity with Lucretius' alphabet analogy, it is tempting to read *elementa* here as implicitly referring to the letters and words on the page, as well as the Empedoclean elements which the passage continues to describe.⁵⁷

⁵⁶ Armstrong (1995, 221): 'No surviving passage does more than suggest that he held Democritus' doctrine about transposition of letters affecting meaning and the whole, as we will see Lucretius does. Philodemus' criticism of Crates' views on what effect the arrangement of letters and their *metatheses* may or may not have on poetry was contained, he tells us, in the second book of *On Poems* (col. xxvi 8-18). Our current fragments give us little clue to Philodemus' own view so far. But we can know one thing about what it must have been. He so vociferously objects that *no* aspect of poetic arrangement, including this aspect most particularly, offers us mere irrational and sensuous pleasure, that he must certainly have considered that the proprieties of letter-arrangement and effect, like those of word arrangement, are to be judged by the reason, and have impact instead on the content and the thought; just as he argues the smallest rearrangement of word-order also does'.

⁵⁷ Unfortunately Ovid only uses *elementum* on four other occasions, none of which can affirm or deny the possibility that Ovid recognised its use as a term for letter. At *Met.* 1.29, *elementum* appears to be used not of the element earth but the particles which compose it; at *Met.* 9.719, it is used of what is taught to students in schools, this could be letters but

Pythagoras in *Met.* 15 also uses language to display the Heraclitean principle of flux, as he describes how all things flow like a river:

cuncta fluunt, omnisque vagans formatur imago;
ipsa quoque adsiduo labuntur tempora motu,
non secus ac flumen.

All things flow, and every wandering image is formed; time too itself glides in continuous motion, not unlike a river (15.178-80).

In particular the phrase *cuncta fluunt* ‘all things flow’ (178) has been read as a direct translation from Heraclitus. Hill (2000, 207) points to Diogenes Laertius’ summarizing of Heraclitean principles (9.8.3-4): γίνεσθαι τε πάντα κατ’ ἐναντιότητα καὶ ῥεῖν τὰ ὅλα ποταμοῦ δίκην ‘all things come into being from opposition and all things in their entirety flow in the same way as a river’. Ovid draws on the derivation of *flumen* ‘river’ from *fluere* ‘to flow’ as the etymological transformation from *fluere* to *flumen* emphasizes the very flux which both terms describe.⁵⁸ Ovid thus displays how transformation and flux are part of the very linguistic structure of the passage, as the verb *fluere* flows on until it eventually becomes *flumen* ‘a flowing’ or ‘river’. Ovid, through the voice of Pythagoras in *Met.* 15, uses language in relation to the principle of Heraclitean flux to interrogate the fundamental mutability of the physical world.

How language relates to the physical world is also discussed in Plato’s *Cratylus*, where the continuously transforming nature of reality is problematized through language. Socrates, attempting to persuade Cratylus against the Heraclitean theory of flux, states that if everything is continually changing then it is impossible to speak about anything accurately, as any

could equally be elementary lessons; while at *Fasti* 3.709, it is used for Caesar’s primary tasks or duties; and at *Fasti* 4.789, they are used of the physical elements such as fire and water. The elements are here personified, being referred to as the two discordant deities.

⁵⁸ Ahl (1985, 287), who also appears to see traces of the *Cratylus* at this point, states in relation to this passage from the *Metamorphoses* that *flumen* ‘shows us that its identity lies not in a state but in a process’.

given thing will have changed during the time it takes to speak about it. He uses beauty as an example (439.d.8-11):

Ἄρ' οὖν οἷόν τε προσειπεῖν αὐτὸ ὀρθῶς, εἰ ἀεὶ ὑπεξέρχεται, πρῶτον μὲν ὅτι ἐκεῖνό ἐστιν, ἔπειτα ὅτι τοιοῦτον, ἢ ἀνάγκη ἅμα ἡμῶν λεγόντων ἄλλο αὐτὸ εὐθὺς γίνεσθαι καὶ ὑπεξίεναι καὶ μηκέτι οὕτως ἔχειν;

Then is it possible to speak of it [beauty] correctly, if it is always slipping away? First, to say that it is that thing, next to say that it is of that kind? Or is it inevitable that, as we speak, it is instantaneously becoming something different, and slipping away, and no longer the way it was? (tr. Sedley 2003a, 19).

Socrates argues that if the world is in a state of flux and everything is continuously in the process of transforming into something else, then our language cannot possibly depict it with any accuracy. This once more sets up a parallel between language and physical reality. This is a similar dynamic to the one which we find in the proem of the *Metamorphoses*, as shifts in the language alter both form and meaning.⁵⁹

Pythagoras a little later in *Met.* 15 encounters a similar difficulty to Cratylus in finding the time needed to capture in words all the things which he wishes to say:

Desinet ante dies et in alto Phoebus anhelos
aequore tinguet equos, quam consequar omnia verbis
in species translata novas.

⁵⁹ Sedley (2003a 19-20) discusses this passage from the *Cratylus* in relation to Aristotle's depiction of the philosopher Cratylus in the *Metaphysics* (1010a7-15) and how he ultimately chose to refuse to speak when faced with the difficulty of completely adopting Heraclitus' theory of flux.

The day will cease and Phoebus will dip his out of breath horses into the deep sea before I could achieve in words all things which have been conveyed into new appearances (15.418-20).

Pythagoras will be unable to speak about all the things that have gained a new appearance because the day is not long enough. As Wheeler (2009, 156-57) demonstrates, this passage and in particular the sequence *quam consequar omnia verbis in species translata novas* is a reworking of the opening line of the proem: *In nova fert animus mutatas dicere formas*.⁶⁰ The word-order is again severely dislocated and if we compare the syntactic structure of both sentences, as Wheeler states, *mutatas ... formas* is replaced by *omnia ... translata* and *in nova ... corpora* by *in species ... novas*: so instead of ‘shapes changed into new bodies’, ‘all things are transferred into new appearances’. If we follow Wheeler’s reading here, then Ovid is transforming the opening line of the proem in two ways: he rearranges his words from one position to another (*nova* from the beginning to the end) and he replaces certain phrases by other ones (*mutatas ... formas* becomes *omnia ... translata*).

Ovid not only has Pythagoras allude to the very first line of the proem, but just as Pythagoras transforms the philosophical outlook of the *Metamorphoses*, so too he modifies its linguistic structure.⁶¹ The internal allusions which can be seen in the speech of Pythagoras emphasize the mutability of both textual and linguistic form, as an internal narrator reads and modifies the opening line of the poem so that *corpora* ‘bodies’ become *species* ‘appearances’.

5. CONCLUSION: TRANSFORMING BODIES AND TEXTS

This chapter has argued that the dislocated word-order of the proem utilizes the same dynamic as Lucretius’ alphabet analogy, as both involve the rearrangement of linguistic structure as a means of affecting physical

⁶⁰ Segal (2001b, 68) also observes the connection.

⁶¹ In the taxonomy of intertextual categories this corresponds with (9), *Internal Allusion*, where *Text A* alludes to a previous passage within *Text A* often through the guise of an additional narrator or character.

transformation. It has also argued that Lucretius appears to be drawing in some way from a similar analogy comparing letters and elements in Plato's *Theaetetus* and *Timaeus*, as well as in Democritus and Leucippus. We have seen analogies comparing the structure of the material world and language in a number of relevant philosophical discourses, including the Stoics and Epicureans as well. It has been argued that the dislocated word-order of the proem of the *Metamorphoses*, the dynamic of reading-as-rearrangement, and the parallel which this generates between the formation and structure of the universe and the text, have their grounding not just in Lucretian physics but in a range of key texts and debates throughout the philosophical tradition.

Directly after Lucretius' alphabet analogy at *DRN* 2.688-99 (quoted above §3.1), Lucretius makes one important stipulation: *nec tamen omnimodis coneciti posse putandum est omnia* 'it must not, however, be supposed that every type of atom can be joined in every type of way.'⁶² If the atoms could be combined in every type of combination, then, following the alphabet analogy, we would have the equivalent of atomic gibberish, as letters combined at random will not necessarily form words. Lucretius follows this up by giving a number of examples of impossible creatures that would exist if every type of atomic combination could occur:

nam vulgo fieri portenta videres,
semiferas hominum species existere et altos
interdum ramos eigni corpore vivo
multaque coneciti terrestria membra marinis,
tum flammam taetro spirantis ore Chimaeras
pascere naturam per terras omniparentis.

⁶² Campbell (2003, 95) describes this as follows: 'The order of the universe and the ontological stability of all matter, and of living things arise from an idea of limit: the world at the atomic level is entirely fluid and chaotic, but due to the fact that not all atoms may join with all others because of the limited number of atomic shapes, a limit of atomic combination is imposed. This causes a fundamentally chaotic system to behave regularly, without the need for any controlling force'.

Atoms and Language

For you would see monsters arising everywhere, appearances of half-beast men coming into being, and in their midst high branches would sprout out of living bodies, and the many limbs of land animals would be joined with sea creatures, then Chimaeras, breathing fire from their foul mouths would be reared by nature throughout the all-creating earth (2.701-6, tr. adapted Smith 2001).

Random combinations of atoms would give rise to a world where creatures could exist with randomly configured bodies and limbs. Changes in atomic structure are realized on the surface of the body. A limit must be imposed on the atomic combinations in order to prevent a world where such monsters could occur.⁶³ While the atoms' ability to be continually recombined allows for change and flux in the universe, the number of atomic combinations must be restricted to maintain stability and prevent outright chaos. Just as in language, letters can be combined and recombined to form many different words, but the number and type of formations of words must be limited for language to function.

It can be argued that the impossible world which Lucretius describes is programmatic for the *Metamorphoses*. For example we can see *semiferas hominum* in the guise of the centaurs (*Met.* 12.210) and the Minotaur (*Met.* 8.131).⁶⁴ We can see the limbs of land animals joined with sea creatures in the depiction of Scylla (*Met.* 14.51). The Chimera appears at *Met.* 9.647. Most tellingly, there are numerous instances of bodies sprouting branches, including Daphne at *Met.* 1.550 (*in ramos bracchia crescunt*) and Myrrha (*in magnos bracchia ramos*), at *Met.* 10.493. It could be argued that Ovid responds to Lucretius' statement of the impossibility of such a world, by writing a poem that portrays it as a reality. Not only do these hybrids and more appear in Ovid's text, but the metamorphosis that is most often

⁶³ These impossible creatures are discussed in chapter 7.

⁶⁴ Ovid's description of the *semibovemque virum semivirumque bovem* 'the half-bull man and the half-man bull' from the *Ars Amatoria* (2.24) has long been recognized as a direct allusion to Empedocles' βουγενῆ ἀνδρόπρωρα 'man-faced ox-creatures' and ἀνδροφυῆ βοῦκράνα 'ox-faced man-creatures' (Hardie 1995, 214). Chapter 7 will compare Ovid's hybrids in the *Metamorphoses* following the implications of this allusion.

recognized as programmatic, is that of Daphne into the tree.⁶⁵ If, as this work argues, this section from *DRN* has a weighty influence on the *Metamorphoses*, then at the *Metamorphoses*' core is both a direct and enduring allusion to the *DRN*, and Lucretius' paralleling of atomic and language structures.

If we extend Lucretius' alphabet analogy and our reading of the first line of the proem of the *Metamorphoses* and apply this to how we read between texts, along the lines that this chapter has been doing, then we could similarly compare how the combination and arrangement of words in one text, when moved, reorganized and recombined may give rise to another text. The atomic structure of the text is composed of *elementa* or words that have already existed elsewhere, so that the *formas mutatas* 'shapes changed' into *nova corpora* 'new bodies', are equally the transformation of one text into another, through the rearrangement, movement and recombination of its atomic-linguistic structure. In taking Lucretius' alphabet analogy for the mirroring of atomic and language structure and shifting this to atomic and text structure, the recombination of atoms in different bodies and in different texts reads intertextuality in terms of bodily transformation. This chapter has attempted to obliquely illustrate this process of textual transformation, as the reader constructs the image of Ovid's text from a patchwork of the raw materials of others. This places intertextuality, cosmogony, transformation, and corporeality all in direct relation to each other and dictates the necessity of studying Ovid's text in terms of atomic, corporeal, universal and intertextual processes all at once.

EXCURSUS 1: PRUDENTIUS' *PSYCHOMACHIA*

In Prudentius' *Psychomachia* (early fifth century AD), we see a similar parallel between the form and content of the verse to that which we have

⁶⁵ *Tristia* 4.7 in particular contains a similar catalogue of hybrid and transforming monsters, which, will be argued, alludes to *DRN* 5.890-94. While Daphne's transformation is not strictly the first to occur in the *Metamorphoses*, with Lycaon's in particular preceding hers, its placement in book 1 following the flood, as well as it being the first transformation that is the result of the gods' amorous pursuits, makes it programmatic for many of the transformations which follow.

identified in the proem of the *Metamorphoses*. In Prudentius' depiction of the dismemberment of Heresy, the way in which the clauses of the sentence are arranged is designed to mirror the subject matter of the text:

Carpitur innumeris feralis bestia dextris.
Frustatim sibi quisque rapit, quod spargat in auras,
quod canibus donet, coruis quod edacibus ultro
offerat, inmundis caeno exhalante cloacis
quod trumat, monstris quod mandet habere marinis.
Discissum foedis animalibus omne cadauer
diuiditur, ruptis heresis perit horrida membris.

The murderous creature was torn by countless hands. Each snatched a piece for himself, to cast into the air, to give to dogs, to feed to carrion-eating ravens, to stuff into filthy, noxious-smelling sewers, to throw out to sea-monsters. The whole corpse was broken up and torn apart by unclean beasts; savage Heresy perished, her limbs broken (*Psych.* 719-25, tr. Roberts 1989).

In this passage Heresy's body is dismembered as retribution for her tearing apart of the Christian church, as her body is torn to pieces by various wild animals. Michael Roberts (1989, 28-29) in an excellent treatment of this passage demonstrates how the fragmentation of Heresy's body is paralleled by a similar fragmentation or 'dismembering' of the sentence, via a series of relative clauses.⁶⁶ The sentence beginning at 720 and ending at 723 is

⁶⁶ Roberts (1989, 29): 'In the passage before us, physical dismemberment finds its linguistic counterpart in the "dismembering" of the sentence (i.e., its breaking up into cola and commata). Rather than employing anatomical itemization, Prudentius relies on a sequence of relative clauses (720 *quod*-723)—relatives or demonstratives frequently perform this function—to create a sequence of coordinate clauses... The five relative clauses divide 2 : 3 on the criterion of length... Underlying these patterns are traditional schemes for dividing creation: the three parts of the universe—earth, sea, and sky—and the three divisions of the animal kingdom—birds, beasts, and fish (man makes a fourth).'

broken up into a sequence of five relative clauses that reflect the final destination of Heresy's limbs, as each of the countless hands snatches a piece of her body: *quod spargat in auras* 'to cast into the air'; *quod canibus donet* 'to feed to dogs'; *coruis quod edacibus ultro offerat* 'to feed to carrion-eating ravens'; *inmundis caeno exhalante cloacis quod trumat* 'to stuff into filthy, noxious-smelling sewers'; and *monstris quod mandet habere marinis* 'to throw out to sea-monsters'. Roberts sees the destination of the limbs and the animals that carry them off as an allegory for the physical divisions of the universe, as well as the divisions of the animal-kingdom: the dogs representing the earth and land animals; the ravens, the air and birds; and the sea monsters, the sea and fish; the sewers correspond to the unpopulated underworld; while the *auras* may refer to the upper air in opposition to the underworld, or it may belong to the initial image of the casting of the limbs into the air. Not only do we have a series of linguistic fracturings being paralleled in corporeal dismemberment, but this is in turn projected upon the divisions of the universe and indeed the creatures which occupy it. Universal creation, if we follow the allegory to its conclusion, arises from the dismemberment of the body. It is impossible to tell whether the posited correspondence between bodily and poetic dismemberment is directly related to that enacted in Ovid's proem, but at the very least it suggests an analogous example of metaliterary play in the dislocated word-order of later Latin epic poetry.

Chapter 2: Fabricating a Textual Universe

1. INTRODUCTION

This chapter will analyze how both Lucretius and Ovid use imagery from wool-working to further conceptualize the relationship between the text and the structure of matter, as both the constituents of the text (letters, syllables and words) and the physical universe (atoms, compounds and elements) must be woven together like a fabric. It will examine how the two phases of wool-working, spinning and weaving, may be read in terms of the two



Figure 1: Detail from an Attic white-ground oinochoe ca. 490 BC. Attributed to the Brygos Painter. British Museum

universal processes of dividing and combining. We have seen in the previous chapter that the creation of the stable universe results from two processes: first unlike elements which had so far been mixed up together (1.17-20) are separated out from each other, before like elements are brought together and bound in position (1.21-25).¹ The overall dynamic is one of reconfiguration, as the primordial mass must be first separated into its constituent elements, before these elements are placed in their correct position. In much the same way, the

reader must separate the ‘sense elements’ from the jumbled up word-order of the opening line before reorganizing these elements and fixing them in place. This chapter will show how Ovid and Lucretius use imagery from wool-working to further conceptualize the interconnectivity of the structures of the universe and text. It will argue that Ovid forms his text from disparate threads derived from other sources and it will make a number of comparisons with Plato’s *Statesman*.

¹ This passage is quoted and treated at further length in the following chapter §§2.2, 4.2.

2. SPINNING A CALLIMACHEAN TRADITION

In the final line of the proem, Ovid requests for the gods to lead down (*deducere*) his song from the beginning of the universe to his own times. Both Hinds (1987, 18-19) and more recently Van Tress (2004, 26), have extensively shown that Ovid's use of *deducere* in relation to the *perpetuum carmen* has powerful programmatic associations, as *deducere* 'functions as a key term in Augustan poetics'. As well as to 'lead' or 'draw down', *deducere* can mean to 'spin' specifically as regards the formation of threads for weaving, as the weft is 'drawn down' from the distaff. In the process of wool-working, a clump of raw wool is placed upon a distaff; through combing and carding, threads are distinguished from this clump of wool; these are then worked around a spindle; and in spinning the spindle, the threads are drawn down and become thin (*Figure 1*).

Ovid's use of *deducere* is also recognised as a direct allusion to τὴν Μοῦσαν λεπταλήν 'the slender muse' of Callimachus' *Aetia* (fr. 1.24), as Callimachus calls for poetry to be finely spun.² Harder (2012, 62) discussing the adjective λεπταλέος in fr. 1.24 compares its use later in the *Aetia* where it appears to refer to the fine and delicate threads used in weaving (fr. 54.13-15). This interpretation is strengthened by the close proximity of the adjective καιρωτούς, which appears nowhere else except here in literature and which Harder (2012, 411) interprets as meaning 'well-woven'.³ The allusion to the *Aetia* at *Met.* 1.3-4 is further strengthened by the anti-

² Ovid refers directly to Callimachus at *Am.* 1.15.13, *Tr.* 2.367 and *Ib.* 55 where he is referred to as *Battiades*. Knox (1986, 9-10) states that in the intensely literary context of the proem of the *Metamorphoses* '*deducite* plays upon the full range of Augustan poetry, in which the *deductum carmen* represents τὴν Μοῦσαν λεπταλήν of the *Aetia* prologue'.

³ In the LSJ *καῖρος* is defined as the 'row of thrums' in the loom, which are the leftover warp threads left attached to the loom after the web is cut off. Harder (2012, 62) discussing the adjective λεπταλέος in this passage from the *Aetia* states that it is a hapax in Homer where it is used of a boy singing 'the Linos-song' (*Il.* 18.569-71). The use of λεπταλέος to denote fine thread is comparable to the use of the more widely attested λεπτός, which in Homer is mostly used in a literal sense, particularly of finely woven garments (eg. *Il.* 22.510 ff. and *Od.* 5.230 ff.). After Homer it becomes incorporated into the terminology of literary criticism, where it indicates subtlety of style (cf. *Ar. Ran.* 828).

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Callimachean undertones of Ovid's *perpetuum carmen*, as Callimachus calls for refinement in poetry instead of ἔν ἄεισμα διηλεκές 'one continuous song' (*Aetia* fr. 1.3).⁴ Not only does *deducere* appear to point to Callimachus, but it refers to a series of images connected with poetic creation and spinning or wool-working in Catullus, Vergil, Horace and Propertius.⁵

Catullus 64 provides us with a precise illustration of the process of wool-working and weaving and how this relates to poetic composition. After the ekphrastic passage depicting the scenes on the tapestry on the bed of Peleus and Thetis, and the procession of wedding guests, Catullus describes the entrance of the *Parcae* or Fates, who set about weaving a further set of stories. As the *Parcae* begin to weave, Catullus gives a detailed description of the process of drawing down the weft from the distaff, while twisting it round the spindle:

laeva colum molli lana retinebat amictum,
dextera tum leviter deducens fila supinis

⁴ The precise meaning of ἔν ἄεισμα διηλεκές in the prologue to the *Aetia* is still contested. For a summary of the arguments see Cameron (1995, 341-45). Much of the difficulty is in establishing whether ἔν simply means 'one' as opposed to 'many' or whether it implies that the poem has 'unity of plot'; διηλεκές can either refer to 'continuous' in the sense of 'perpetual' or 'from beginning to end'. For a full discussion of these terms see Harder (2012, 18-22). Most relevant for our concerns is whether διηλεκές implies a notion of poetic quality rather than just temporal continuation. Ovid is not the only Roman poet to render the phrase (ἔν) ἄεισμα διηλεκές in this way. Horace similarly writes (*Carm.* 1.7.5): *sunt quibus unum opus est intactae Palladis urbem | carmine perpetuo celebrare ...* 'there are those whose one task is to praise the city of untouched Pallas in continuous song'. In the *Tristia* (2.557-60) Ovid reiterates *Met.* 1.3-4 when more directly addressing Augustus: *Atque utinam revoces animum paulisper ab ira, | et vacuo iubeas hinc tibi pauca legi, | pauca, quibus prima surgens ab origine mundi | in tua deduxi tempora, Caesar, opus.* Cameron (1995, 360) uses these lines from the *Tristia* to argue that Ovid interpreted Callimachus' ἄεισμα διηλεκές in terms of temporal rather thematic continuity.

⁵ Van Tress (2004, 26) and Hinds (1987, 18-19) analyse the connection with Callimachus and in particular the image of weaving in both the proem of the *Met.* and the prologue of the *Aetia*. Barchiesi (2005, 141-45) gives a further list of works that treat Ovid's use of *deducere* and potential allusions.

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formabat digitis, tum prono in pollice torquens
libratum tereti versabat turbine fusum, ...

The left hand was holding the distaff wrapped in soft wool; the right, then, lightly drawing down the threads with upturned fingers shaped them, while, with downturned thumb twisting, revolved the spindle balanced by its smooth whorl; ... (64.311-14, tr. adapted Lee 1990).⁶

By revolving the spindle, the fine thread, or weft, is drawn down (*deducere*) from the unformed mass of wool that is wrapped around the distaff (again compare *Figure 1*). The length of thread corresponds to the length of life of the individual for which it is spun. The spinning of the thread also functions as a metaphor for poetic creation, as the repeated phrase which follows, *currite ducentes subtegmina, currite, fusi* ‘run, spindles drawing out the weft, run on’, instigates the movement of the poem and the continuation of the story.

The image is also frequently used by other poets as a metaphor for poetic creativity. In the beginning of *Eclogue 6*, Cynthius tells the poet: *Pastorem, Tityre, pinguis | pascere oportet ovis, deductum dicere carmen* ‘it is right for a shepherd, Tityrus, to feed his sheep fat, but to recite a thin spun poem’ (4-5). As Clausen (1994, 174) states, these lines from *Eclogues 6* demand to be read as an allusion to Callimachus’ rejection of large-scale cumbersome poetry in the *Aetia*:

καὶ γὰρ ὄτ]ε πρότιστον ἐμοῖς ἐπὶ δέλτον ἔθηκα
γούνασι]ν, Ἀπ[ό]λλων εἶπεν ὁ μοι Λύκιος·
’.....]...ἀοιδέ, τὸ μὲν θύος ὅττι πάχιστον
θρέψαι, τῆ]ν Μοῦσαν δ’ ὠγαθὲ λεπταλέην·

For, when I put a writing-tablet on my knees for the first time Apollo Lycius said to me: ‘... poet, feed the sacrificial animal so that it

⁶ The passages of Catullus displayed throughout this work follows Mynors’ 1963 OCT, unless otherwise stated.

becomes as fat as possible, but, my dear fellow, keep the Muse slender (fr. 1.21-4, ed. and tr. Harder 2012).

These antecedents suggest that in the proem of the *Metamorphoses*, *deducere* is a heavily loaded term with specific programmatic implications. Ovid not only uses it to place his poem in a tradition stemming from Callimachus, but it may also be read as a *double allusion* (4), referring to Vergil's *Eclogues*, which is in turn an allusion to Callimachus' *Aetia*. There is also an imbedded *corrective allusion* (6), as Ovid simultaneously refers to the slender verses advocated by Callimachus, while stating that his poem will instead be a *perpetuum carmen*.⁷ Indeed we could read the image of the slender threads or verses being drawn down from the wool on the distaff as an image for poetic allusion itself, as Ovid draws his verses not from the muses but from Vergil and Callimachus, and indeed Catullus, Horace and Propertius as well.⁸

What follows in *Eclogue 6*, as in the *Metamorphoses*, is an account of the cosmic history and origin of the world.⁹ In both the *Metamorphoses* and *Eclogue 6* there appears to be an alignment between universal and poetic creation.¹⁰ In Catullus 64 we see that the image is about giving raw material form, as the fine thread is created from the globular mass of wool.

⁷ On 'double' and 'corrective' allusions see the taxonomy of intertextual terms in the introduction.

⁸ The probability that Ovid is alluding to the prologue of the *Aetia* strengthens this argument, as Callimachus likewise begins his poem with multiple allusions. Harder (2012, 9) states in relation to the prologue of the *Aetia* that apart from the explicit references to the authors which Callimachus names 'there are many allusions to other authors, which evoke the extensive literary tradition before Callimachus and also reflect ancient views on matters like originality, literary quality, and size... Thus the reader is presented with a kaleidoscopic view of the literary tradition and literary points of view before Callimachus'.

⁹ Comparisons between the cosmogonies of the *Metamorphoses* and *Eclogue 6* are discussed in chapter 3 §4.4.

¹⁰ Similarly Horace says: *cum lamentamur non apparere labores | nostros et tenui deducta poemata filo* 'when we complain that our works and our poetry spun with thin threads are unnoticed' (*Epist.* 2.1.224-25); while Propertius states: *at tibi saepe novo deduxi carmina versu* 'but I have often spun you a poem with new verse' (1.16.41).

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Ovid's use of *deducere* may also hint to this idea of both the poem and the universe gaining specific form from a disordered mass.¹¹ As Hinds (1987, 18) states, 'just as the spinner spins a thin thread from the wool on the distaff, so the Callimachean poet forms something thin and fine from a mass of formless material'. Ovid's description of the unformed primordial universe as a *rudis indigestaque moles*, 'rough unordered mass', likewise may look towards the image of the formless mass of wool, which will be distinguished into its fine threads or elements.

Wheeler (1995b, 105) argues that Ovid also uses weaving imagery at *Met.* 1.34-35, when describing the formation of the earth: *magni speciem glomeravit in orbis* 'he [the god and more kindly nature] rolled it into the appearance of a great globe'. *glomerare* can specifically refer to the process of winding or gathering material into a ball. In book 6 of the *Metamorphoses*, Arachne is described engaged in the different processes of wool-working which appears to recall the description of the earth gaining form:

sive rudem primos lanam glomerabat in orbes,
seu digitis subigebat opus repetitaeque longo
vellera mollibat nebulas aequantia tractu,
sive levi teretem versabat pollice fusum,
seu pingebat acu, scires a Pallade doctam.

Whether she was forming the raw wool into its first balls, or working the stuff with her fingers and softening the fleeces being equal to clouds with a repeated long drawing out, whether she was turning the smooth spindle with a light thumb, or weaving with a needle, you would know she had been taught by Pallas (6.19-23).

¹¹ The image of the revolving spindle gaining bulk and circumference and expanding outwards like a spinning world gaining form may contain a further hint of a cyclical world undergoing creation and destruction when the thread is subsequently unwound.

Ovid divides the process of wool-working into three phases: first the clump or ball of raw wool is wound onto the distaff; second the threads are carefully drawn out from the clump of wool and spun down with the spindle; and finally the fine threads are used to weave elaborate garments. The image of Arachne forming the first balls of raw wool on the distaff (*sive rudem primos lanam glomerabat in orbis*) corresponds in detail to the image of the demiurge rolling the earth into shape (*magni speciem glomeravit in orbis*), while the description of the first clumps of wool as *rudis* ‘rough’ or ‘unwrought’ may also refer back to the description of the primordial universe as a *rudis indigestaque moles* (*Internal Allusion*). The comparison of the clumps of fleece to clouds also strengthens the link between the images of the formation of the universe and wool-working.¹² The lengthy ekphrastic passage describing Arachne’s tapestry which follows (6.103-28) also indicates a clear link with weaving and poetic creativity.¹³

3. WEAVING ATOMIC STRUCTURE IN *DE RERUM NATURA*

The image of spinning thread out of wool is not so much an image of artistic creation, as one where the primary materials, the weft and the warp threads, needed for the creative process are themselves produced. In the process of weaving the thinly spun warp threads are tied vertically to the top of the vertical loom and are weighed down with warp weights. The weft thread is then passed horizontally through the warp threads, usually using a shuttle, before being beaten upwards into place in order to create the weave (*Figure*

¹² There are also a series of verbal echoes with the description of the Parcae spinning wool in Catullus 64, which could suggest that Ovid is also alluding to this passage: *laeva colum molli lana retinebat amictum, | dextera tum leviter deducens fila supinis | formabat digitis, tum prono in pollice torquens | libratum tereti versabat turbine fusum, ...* (64.311-14 above). Ovid also uses the terms *mollire*, *levis*, *teres* and *lana* when describing Arachne’s weaving (6.19-23 above).

¹³ Hardie (2002a, 176) states that both Arachne’s and Philomela’s tapestries ‘in their different ways, reflect the themes and structures of the *Metamorphoses* as a whole’. On the relationship between Arachne’s tapestry and the structure of the *Metamorphoses* see also Harries 1990 and Wheeler 1995b (105-6).

2).¹⁴ Weaving then is an act of creative formation, which uses the warp and weft threads as constituents in order to form a fabric. The process of weaving has often been associated with the creation of poetry. For instance in the *Iliad* (3.212) Odysseus and Menelaus are described as weaving their words together when talking to an assembly: ἀλλ' ὅτε δὴ μύθους καὶ μήδεα πᾶσιν ὕφαινον 'when they were weaving words and plans to everyone'.¹⁵ Sappho gives Eros the new epithet μυθοπλόκος 'story-weaver' (fr. 188, Campbell 1990). Pindar in the *Olympian Odes* (6.86-87, Race 1997) refers to his task as πλέκων ποικίλον ὕμνον 'weaving a many-coloured song', while Bacchylides (*Odes* 5.9, Maehler 2003) also describes himself as having woven a song with the deep-girdled graces: ἦ σὺν Χαρίτεσσι βαθυζώνοις ὑφάνας | ὕμνον.¹⁶

¹⁴ Crowfoot (1936) discusses the development of different looms and weaving methods in antiquity.

¹⁵ Snyder (1981, 194) notes the numerous instances of weaving words and stratagems in Homer: *Il.* 3.211-13, 6.187-89, 7.324-25; *Od.* 4.677-80, 9.420-23, 13.303-7, 13.386-88. Clarke (1999, 251-53), providing further examples, discusses how the weaving of a plan in Homer is connected to how the Moirai spin one's future fate.

¹⁶ Snyder (1981, 193), discussing these passages, states that 'Sappho, Pindar, and Bacchylides may all be said to have conceived of their craft as a process of "weaving" a patterned tapestry of song'. West (2007, 37) also discusses weaving and Greek lyric poetry. Nosch (2014, 93) draws out a number of further connections between weaving and poetry. She compares how the weft is woven from one side to the other and then back again, with the archaic form of writing called βουστροφηδόν, literally 'turning like an ox' where sentences alternatively run from left to right and right to left, like an ox ploughing a field. Nosch (2014, 94) also compares metric feet with weaving patterns: 'the basic metric feet of an iamb (˘ ˘) or trochee (˘ ˘) recalls the basic tabby binding of weft threads going over and under the warp threads. Another binding is the twill such as the 2/1 twill in which the rapport is composed of weft threads that pass over one and under two warp threads (˘ ˘˘). This pattern recalls the dactyls that constitute the basic elements of the Homeric hexameter'. How far we should take such observations is debatable; however they do suggest a deep-rooted connection between weaving and the mechanics of poetic composition.

In Lucretius' *De Rerum Natura*, weaving is frequently used as an analogy for both atomic and linguistic structure. Snyder (1983, 38) analyses Lucretius' recurrent use of weaving imagery, stating that 'the loom helped



Figure 2: Terracotta lekythos ca. 550–530 B.C. Attributed to the Amasis Painter Metropolitan museum, New York

to shape not only Lucretius' conception of the world, but also his view of his role in weaving together the words to describe that world for his reader'. Snyder points to Lucretius' frequent appropriation of words used to describe the process of weaving in his illustration of the atomic fabric. At the beginning of his introduction to atomic theory in *DRN* 1, Lucretius states: *Principium cuius hinc nobis exordia sumet, nullam rem e nihilo gigni divinitus umquam* 'the beginning of this work will assume as its basis, from this point on, that nothing is ever born from nothing' (149-50).¹⁷ Quintilian explains how *exordium* can refer

both to the 'the beginning of a rhetorical speech' (*Inst.* 4.1.1), as well as 'the warp of a loom or web' (*Inst.* 5.10.71).¹⁸ It is evident that both meanings were in use in Lucretius' time.¹⁹ As Snyder (1983, 39) argues, Lucretius'

¹⁷ This corresponds to Parmenides' concept that 'nothing can arise from nothing, and nothing can be destroyed into nothing' (DK 28 B8). Campbell (2003, 95) states that both Lucretius and Empedocles 'appropriate and invert Parmenides' tenet ... in order to prove that their fundamental elements must exist; [Lucretius] arguing that without some permanent underlying entities, the atoms, the universe would lack all order. So, for the Epicureans as well, the world is characterized both by a constant fluidity and by an underlying permanence and stability'.

¹⁸ Quintilian (*Inst.* 4.1.1) also states that *exordium* is a synonym for *prooemium*.

¹⁹ *Exordium* already had the meaning of a beginning of a speech in the *Rhetorica ad Herennium* (1.3.4), while Cicero in *De Oratore* (2.145) uses *exordior* to describe the

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use of the plural *exordia* can be translated literally as ‘warp threads’. The warp represents the basis or foundation upon which Lucretius will weave and create his argument.

The warp here corresponds to the statement that ‘nothing is ever born from nothing’, one of the tenets of Lucretius’s atomic theory. In its more abstract sense as ‘first-beginnings’, Lucretius also frequently uses *exordia* as one his words for atoms.²⁰ At *DRN* 3.31, Lucretius says that he has shown that the *exordia* are the constituents of all things: *cunctarum exordia rerum qualia*. Just as the warp threads are the constituent components of the fabric, so the atoms comprise physical bodies and material reality. Lucretius’ use of *exordium* in the variety of contexts above as a term for the primary constituents of matter, the foundations of the universe, and the components of speech enact a correspondence between these ideas and the process of weaving.

Later in *DRN* 1, the warp itself becomes an analogy for Lucretius’ conception of atomic structure. At 1.238-49, Lucretius argues further that when things are destroyed they do not dissolve into nothing but rather are reduced to their constituent elements. Lucretius uses weaving imagery to illustrate this point:

at nunc, inter se quia nexus principiorum
dissimiles constant aeternaque materies est,
incolumi remanent res corpore, dum satis acris
vis obeat pro textura cuiusque reperta.

But now, because the bindings of the first atoms fit together in various ways and the atom itself is imperishable, things with body

process of weaving. Snyder (1983, 39) also notes how Quintilian uses *exordium* both in its rhetorical and literal senses.

²⁰ Lucretius uses *exorida* as a term for atoms at *DRN* 3.31, 380; 4.45, 114; 5. 677. As Snyder (1983, 40) notes, it is also used to denote the ‘foundations’ of the world at *DRN* 2.1062; 5.331, 430, 471.

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remain intact until a force sharp enough meets them and the fabric of each is reinvented (1.244-47).

Matter is here envisaged as a fabric made of threads of atoms. While the fabric of a thing can be unwound and destroyed, the threads or atoms which constitute it cannot. Both *nexus* ‘binding’ and *textura* ‘fabric’ suggest weaving imagery, while the atoms are also described as *contextus* ‘interwoven’ at 1.243. *reperire* suggests that once the fabric of the thing is unwound, the atoms or threads can be rewoven or ‘reinvented’ to form different fabrics or things.²¹

Lucretius also uses imagery from weaving to describe the structure of the macroscopic world. At *DRN* 1.360-63, Lucretius uses an analogy between the universe and a ball of wool (*glomus lanae*). He states that since the ball of wool is equal in bulk yet lighter than a ball of lead this shows how void exists in the universe. In *DRN* 5 when discussing the world’s potential dissolution, he calls the *maria* ‘seas’, *terras* ‘lands’, and *caelum* ‘sky’, the *tria talia texta* ‘these three great fabrics’ (5.94).²² Given that Lucretius employs imagery from weaving to illustrate how he structures his argument (1.149-50), and how he envisages the structure of the world both on an atomic and universal scale, we may read a direct correlation between Lucretius’ conception of the text and the universe. As Gale (2009, 119) states ‘given that weaving was also a very common and traditional metaphor for poetic composition, [Lucretius’] language may also suggest that there is

²¹ Snyder (1983, 41) suggests that Lucretius’ use of weaving imagery may be derived from Epicurus who uses the terms *περιπλοκή* ‘interlacing’ and *πλεκτικός* ‘entwinable’ in relation to atomic movements (*Letter to Herodotus* 43). For further discussion of Lucretius’ representation of atomic structure see chapter 1 §4.5.

²² Gale (2009, 119) points to further uses of weaving imagery at *DRN* 5.331, 430, 466, 471, 677, and especially 267 and 389, where the rays of the sun unweave (*retexere*) the water through evaporation: ‘if the world is a “fabric” woven of atoms, it should be possible for it to be picked apart again, just as a fabric can’. Just after Lucretius names the elements, the three great fabrics he says: *una dies dabit exitio, multosque per annos | sustentata ruet moles et machina mundi* ‘one day will bring destruction, and the mass and machinery of the world, maintained for many years will be overthrown’ (5.95-96). *mole* is also the term used by Ovid to refer to the mass of *chaos* at *Met.* 1.7.

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a direct, “iconic” relationship between his poem and the world that it describes’.

In *DRN* 2.112-24, Lucretius discusses how atoms that have been emitted from compounds interact with each other in a void, how they are tossed about and undergo a rapid sequence of combinations and separations. Lucretius uses the analogy of how motes behave in a sunbeam to illustrate this atomic process:

contemplator enim, cum solis lumina cumque
inserti fundunt radii per opaca domorum:
multa minuta modis multis per inane videbis
corpora misceri radiorum lumine in ipso ...

Consider for instance, when the sunlight and thrust rays pour through the shadows of the house: You will see many tiny bodies mingling in many ways through the empty space within the very light of the rays ... (2.114-17).

The mingling of the motes in the sunbeam is the closest we can come to witnessing atomic changes in action. The sunbeam analogy contains a number of subtle references to weaving imagery (Snyder, 1983, 41). *radius* which here refers to the ‘ray of light’ is used as a technical term for a ‘shuttle’, used to weave the weft into the warp, at *DRN* 5.1353.²³ In the analogy it is the sunbeam that is thrust or introduced into the dark areas of the house, and this is compared to a shuttle being inserted into the warp threads. The passage implicitly links weaving and atomic processes.

This theme is picked up in book 6 of the *Metamorphoses*, in the weaving contest between Arachne and Minerva, where Ovid appears to allude to this analogy from Lucretius and specifically its undertones of weaving imagery. At *Met.* 6.53-69, Ovid gives a detailed description of the method of weaving on a loom and in particular how the shuttle is used to weave the thread through the warp: *inseritur medium radiis subtemen acutis*

²³ Vergil also uses it as a term for a shuttle (*Aen.* 9.476)

‘in between, the weft was thrust with sharp shuttles’ (56). This line corresponds neatly with *DRN* 2.115: *inserti fundunt radii per opaca domorum*.²⁴ If Ovid is directly alluding to Lucretius at this point then it demonstrates an acute awareness on Ovid’s part of Lucretius’ use of weaving to explain atomic processes, as Ovid re-appropriates the language, which Lucretius uses to explain how atoms behave in a void, to describe the actual process of weaving itself.²⁵ As the ekphrastic passage describing Arachne’s tapestry is recognized as miniature representation of the *Metamorphoses*, it is fitting that Ovid ends his description of the weaving process by stating *et vetus in tela deducitur argumentum* ‘and an old story was spun in the warp’ (6.69), specifically recalling (*Internal Allusion*) the proem of the *Metamorphoses*. If the dislocated word order of the proem is to be imagined as the clump of wool held on the distaff, from which the words or threads must be first drawn down and distinguished, then the second stage is for these threads to be correctly woven together to form the fabric of the discourse.

4. WEAVING IN PLATO’S *STATESMAN*

In order to further understand the intellectual background for the conception of weaving as an illustration for the structure of matter and language, it is necessary to consider how imagery connected with the processes of wool-working was used in philosophical discourse prior to Lucretius and Ovid.²⁶

²⁴ Snyder (1983, 41) also picks up the connection between *DRN* 2.114-15 and *Met.* 6.56. Rosati (1999) analyses Ovid’s use of weaving imagery specifically in relation to the stories of the Minyades and Arachne.

²⁵ The connection with the sunbeam analogy is strengthened further as Ovid goes on to compare the subtlety of tone in Arachne’s tapestry with the colours in the rainbow, which he says are generated *qualis ab imbre solet percussis solibus* ‘just as when a shower has been struck by sun beams’ (*Met.* 6.63); while the colours of the rainbow seem separate, when the gradation of the spectrum is examined up close the transitions are almost indistinguishable, just as threads with only a hint of difference can give rise to a multitude of vibrant shades when woven together in a fabric (61-66).

²⁶ A judgement on the precise relationship between the texts discussed here, mainly Plato’s *Statesman*, *Sophist*, *Cratylus*, *Theaetetus* and *Timaeus*, will be reserved until later in this argument.

Similar to §4 in the previous chapter, the following section will briefly examine connections between weaving, language and the structure of the material world in Plato in order to gain further insight into the impact of wool-working imagery from the *Wider Tradition* (14). A potential antecedent for some of the ideas we have discussed so far may be found in Plato's *Statesman*, where the Eleatic Stranger uses weaving as an illustration designed to help him reach a definition of the Statesman and in particular the Statesman's task in producing a unified and integrated society, which is the purpose of the dialogue.

The Stranger provides a lengthy description of wool-working, which he divides into two general processes, that of separating and that of combining: Τὸ μὲν τῆς ὑφῆς συμπλοκή τίς ἐστί που. 'On the one hand, the process of weaving is a form of uniting, isn't it?' (281a3); Τὸ δέ γε τῶν συνεστώτων καὶ συμπεπιλημένων διαλυτική 'But the process with the combined and entangled wool is a loosening' (281a5-6).²⁷ The first stage involves the drawing down and distinguishing of the fine threads that will be used to form the weft and the warp from the clump of wool on the distaff, while the second stage is the weaving together of these threads on the loom to form a fabric. He uses the further dichotomies of ξαντική²⁸ 'carding' versus ὑφαντική 'weaving', and στρεπτικόν 'spinning' versus συμπλεκτικόν 'interlacing' (282d5). Having distinguished these individual processes, the stranger concludes by giving a definition of weaving:

τὸ γὰρ συγκριτικῆς τῆς ἐν ταλασιουργίᾳ μόριον ὅταν εὐθυπλοκία κρόκης καὶ στήμονος ἀπεργάζεται πλέγμα, τὸ μὲν πλεχθὲν σύμπαν ἐσθῆτα ἐρεᾶν, τὴν δ' ἐπὶ τούτῳ τέχνην οὕσαν προσαγορεύομεν ὑφαντικήν.

²⁷ The displayed quotations from the *Statesman*, *Cratylus* and *Sophist* follow Duke's (1995) OCT edition. I am grateful to Michael Clarke for providing a translation of this passage.

²⁸ Carding involves the combing down of threads from the clump of wool on the distaff in order to distinguish the threads which will be further drawn down through spinning.

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For when that subdivision of the process of combination which wool-working involves creates a tight fabric by interlacing weft and warp, the resulting fabric as a whole is called a woollen garment, and the art which is responsible for this is called weaving (283a4-8, tr. Waterfield 1995).

Weaving then involves the precise combination and integration of the weft and warp threads on the loom to form a complete fabric or garment.²⁹

Having stated this, the Stranger immediately questions why it has taken them so long to arrive at this definition and why they could not have merely said this at the beginning. By drawing attention to the structure of the argument, we are encouraged to observe the similarity between how the Stranger and young Socrates have arrived at this definition of weaving and weaving itself. The Stranger first began by separating the process of wool-working into two stages and then separating these stages further into individual processes. This corresponds to the drawing down and distinguishing of the threads of weft and warp from the distaff. Having distinguished the individual processes involved in both phases, the Stranger then brings the individual threads of his argument together and weaves them into a working definition. Not only then does weaving form an illustration for the Statesman, but it is used to illustrate how to form an argument and how to define something. Plato, in the guise of the Stranger, essentially constructs an analogy between weaving and language, or more specifically how to form and structure an explanation or argument.

This reading is strengthened further if we compare this passage from the *Statesman* to Plato's *Cratylus*, where Socrates uses the first stage of wool-working to illustrate the act of naming. Just as naming is a means of correctly distinguishing one thing from another, the first stage of wool-working involves the separation of the mass of wool on the distaff into its constituent threads: *Κερκίζοντες δὲ τί δρωμεν; οὐ τὴν κρόκην καὶ τοὺς*

²⁹ In the *Statesman* (281c-282a) and the *DRN* (5.135-55), both Plato and Lucretius not only describe weaving as well as the specific tools for weaving, but both stress the importance of the manufacture of the weaving tools.

στήμονας συγκεχυμένους διακρίνομεν; ‘what do we accomplish when [operating the κερκίς]?’; we separate the weft and the warp that are confounded, don’t we?’ (388b1-2). The κερκίς here is a tool used in wool-working and is clearly engaged in the process of separation. Socrates then states that naming is also a tool used to separate and distinguish one thing from another: Ὄνομα ἄρα διδασκαλικόν τί ἐστὶν ὄργανον καὶ διακριτικὸν τῆς οὐσίας ὡσπερ κερκίς ὑφάσματος. ‘Therefore a name is tool for teaching and for separating being, just like a κερκίς is for something woven’ (388c1-2). If this image of wool-working is consistent with the *Statesman*, it is clear that Socrates is comparing naming to the process of distinguishing the weft and warp threads and more specifically that a name is a tool that performs this act of separation in language.

A difficulty arises, however, when we try to define κερκίς and κερκίζειν. There have been two widely held interpretations of the role of the κερκίς in the process of wool-working: initially it was believed to refer to the shuttle which carries the weft thread through the warp; however, now it is generally accepted that it refers to a ‘pin-beater’, a tool which plucks and beats the weft thread upwards into place.³⁰ Neither of these tools is used in

³⁰ Admello (2011, 108) translates the κερκίς as ‘pin-beater’ and κερκίζειν the act of ‘pin-beating’ stating that since Plato is describing an act of separation they cannot refer to the ‘shuttle’ and ‘weaving’ since Plato refers to weaving as a form of combination and intertwining. Admello does note a number of difficulties in translating κερκίς as a ‘pin-beater’. Barber (1992, 273-74) provides the most accurate description of the function of the κερκίς as well as the other tools and processes of wool-working and weaving. She states that at ‘the heart of it all seems to be verbal root *kek-* which has to do with hitting strings noisily with sharp instruments. From looking just at the Greek, one has trouble telling whether the meaning began with weaving or with playing a stringed instrument; but since all the cognates outside Greek have to do with weaving, we can assume weaving as the semantic base for Greek too... the *kerkis* seems at least sometimes to have carried the weft on it, thus functioning in place of the shuttle, while the sharp tip was used to beat the weft into place’. Outside of weaving, the κερκίς has been used to denote a plough and the wedge shaped aisle in the theatre (LSJ). As we have already seen weaving can be associated with the imagery of ploughing as the weft is woven back and forth; ploughing also separates the earth into ridges. Sedley (2003a, 60) and Nosch (2014, 96) translates κερκίς as a ‘shuttle’ without considering this problem.

the first stage of wool-working; however it appears likely, especially when we compare the passage from the *Theaetetus*, that Socrates is referring to something similar to carding in this analogy. It could be argued that Plato has a different tool in mind than the κερκίς and that this shows a gap in his understanding of the weaving process, or that the κερκίς and κερκίζειν provided a neat example of how the name/tool is related to its verbal action. Without necessarily pinning a reductive definition to κερκίς, the most important aspect of its function at least for Plato is that it performs the act of separating threads just as naming is a means of distinguishing and indicating being.

In the *Sophist*, κερκίζειν is grouped with other processes of separating the weft and warp threads in the first stage of wool-working: Καὶ πρὸς γε τούτοις ἔτι ξαίνειν, κατάγειν, κερκίζειν, καὶ μυρία ἐν ταῖς τέχναις ἄλλα τοιαῦτα ἐνόητα ἐπιστάμεθα. ‘And alongside these still, carding, drawing down (spinning), κερκίζειν, and the countless others we know in the arts similar to these’ (226b8-9). The Stranger at this point is comparing these processes from wool-working with other processes of separation: Τὰ τοιάδε, οἷον διηθεῖν τε λέγομεν καὶ διαττᾶν καὶ βράπτειν καὶ διακρίνειν ‘such as these, which we call straining, sifting, winnowing, and separating (226b5-6). Not only is the Stranger saying that the act of separating is a common component across the arts and other labours, but also that these reflect wider forces at play in the formation of the universe and particularly the development of distinction. As we shall see in chapter 4 (§3.4), winnowing in particular is used in the *Timaeus* (52e-53c) to illustrate how like and unlike elemental powers are separated from each other.

5. CONCLUSION

The above section shows how imagery from wool-working and weaving were used to illustrate a complex discourse on the nature of language and physical reality. While part of the *Wider Tradition*, the motifs of spinning and weaving in Plato’s *Statesman* and *Cratylus* appear to inform Lucretius’ use of weaving imagery in the *De Rerum Natura* to illustrate the underlying fabric of matter. First the threads or primary components must be distinguished before they can be woven together to form physical reality.

Fabricating a Textual Universe

This is also the dynamic at play in the formation of the universe in the *Metamorphoses*, which will be explored further in the following chapter, as first the primary elements must be distinguished from the formless mass of *chaos* before they can be correctly combined and positioned in the composition of physical reality. Both the processes of distinguishing and interlacing are also used to illustrate poetic creativity, as the poet spins his verses, drawing them down from the formless clump of wool held on the distaff, before weaving them together to form a poetic whole. It could be argued that Ovid's allusion to Lucretius' use of weaving imagery in this context provides a means of comparing universal and poetic composition. It may be feasible that Ovid's use of *deducere* in the proem provides a marker for his allusive activity, as he will draw down his verses from previous poets before interlacing them into a poetic whole.

We have seen how Ovid's allusion to the prologue of the *Aetia* in the proem of the *Metamorphoses* has significant programmatic implications. This is likely to be significant for understanding Ovid's use of multiple allusions and the switching between different modes of discourse in the depiction of the formation of the universe which follows. Not only is it probable that Ovid is alluding to Callimachus via Vergil, and possibly Catullus, Propertius and Horace as well (*double* or *window allusion*), but as Harder (2012) has identified, the prologue of the *Aetia* is itself littered with multiple allusions. Thus it may have provided a *model* (11) for the type of intertextual activity that Ovid is engaged in at the beginning of the *Metamorphoses*. This will be discussed further in the following chapters.

Chapter 3: *Chaos* and the Primordial Universe

Ἀπολλόδομος δ' ὁ Ἐπικούρειος ἐν τῷ πρώτῳ περὶ τοῦ Ἐπικούρου βίου φησὶν ἔλθειν αὐτὸν ἐπὶ φιλοσοφίαν καταγνόντα τῶν γραμματιστῶν, ἐπειδὴ μὴ ἐδυνήθησαν ἐρμηνεῦσαι αὐτῷ τὰ περὶ τοῦ παρ' Ἡσιόδῳ χάους.

Apollodorus the Epicurean, in the first book of his *Life of Epicurus* says that he [Epicurus] turned to philosophy in disgust at his schoolteachers, when they were not able to explain to him the meaning of *chaos* in Hesiod (Diog. Laert. 10.2, ed. Dorandi 2013, tr. adapted Hicks 1925)

1. INTRODUCTION

This chapter will examine Ovid's depiction of the formation of the universe from primordial *chaos*. Following the methodology proposed in the previous chapters, it will further explore the relationship between the form and content of the text, particularly in relation to how the universe takes shape from its primordial state. It will seek to identify numerous allusions to passages from other texts, including Vergil's *Aeneid*, Lucretius' *DRN*, Apollonius Rhodius' *Argonautica*, and Empedocles among others, which Ovid incorporates into his portrayal of the primordial universe and its subsequent formation. It will analyse how by incorporating allusions from texts from different genres, Ovid continually shifts between different modes of discourse. His depiction of the primordial universe and the formation of the cosmos will be shown to incorporate elements of Lucretian physics, as well as Stoic theories of divine design, while also switching between the genres of cosmogonic mythological epic and philosophical and scientific discourse. On a metaliterary level, it will also be suggested that Ovid's appropriation of these sources often reflects what is said to be occurring to the material structure of the universe, and in particular how the multitude of

sources which Ovid uses for his depiction of *chaos* mirrors the mixing and blending of elements which takes place in this primordial state. Like Epicurus in the above passage from Diogenes Laertius we must move from mythology to philosophy in order to understand Ovid's depiction of *chaos*.

In the *Metamorphoses*, as in many other texts, cosmogony is a site for poetic creativity, multiplicity and innovation, as opposed to imitation based on either philosophical or poetic sources.¹ Before looking in detail at Ovid's depiction of *chaos*, it is necessary to briefly consider some of the source texts that have recently been argued as important to Ovid's depiction of *chaos* and universal creation. Stephen Wheeler (2000) has emphasised the connection with Hesiod and his depiction of $\chi\acute{\alpha}\omicron\varsigma$ in the *Theogony* (116 ff.), while Philip Hardie (2005) and Ioannis Ziogas (2013) have recently attempted to re-establish the importance of the Hesiodic *Catalogue of Women*. Hardie (1995 and 2009b) has also frequently highlighted the importance of Empedocles and Lucretius in the Speech of Pythagoras from Book 15, while Damien Nelis (2009) and Gordon Campbell (2003) have shown the importance of Empedocles, Apollonius Rhodius and Lucretius earlier in Book 1. Wheeler (2000, 13) also considers that Ovid in his depiction of *chaos* is primarily alluding to the Song of Orpheus from Apollonius Rhodius' *Argonautica* (1.496-97), with a *double allusion* to the shield of Achilles (*Il.* 18.483). Wheeler (2000) also notes the potential influence of Euripides' *Melanippe* (fr.484) as well as parallels in the almost contemporary Diodorus Siculus (1.7.1). Knox (1986) likewise highlights the importance of Empedocles, as well as Democritus. McKim (1984), who argues against the claim that Ovid directly alludes to the Presocratics, shows the influence of the Stoics and in particular Cicero's *De Natura Deorum*. Robinson (1968) has also shown the potential influence of Plato's *Timaeus*, most likely via Cicero's translation of the *Timaeus*.² Even a brief recap of

¹ Conte (1986, 76) states that: 'the opening is the place where all the signals point to the originality of the work or to its position within literary production'.

² On more general influences on *Met.* 1, Wheeler (1999, 21-22) notes the influence of the Hellenistic catalogue poetry represented by such poems as Nicander's *Heteroeumena*, the *Ornithogonia* of Boeus or the *Ornithogonia* of Aemilus Macer, the influence of which Ovid attests at *Tristia* 4.10.43. The importance of Vergil's 6th *Eclogue* and *Georgics*, as well as

recent scholarship demonstrates a plethora of potential sources that have been proposed for Ovid's depiction of the primordial universe and the subsequent formation of the cosmos.

2. *CHAOS* AND THE PRIMORDIAL UNIVERSE

2.1 *Ovidian* Chaos

Ovid opens the *Metamorphoses* with an account of the creation of the world; he begins, directly after the invocation, by describing the initial or primordial state of the universe, the nature of the world before creation. He calls this state *chaos* and describes it as 'rough unordered mass' where the discordant elements of unassembled things were mixed together:

Ante mare et terras et quod tegit omnia caelum
unus erat toto naturae vultus in orbe,
quem dixere chaos:³ rudis indigestaque moles
nec quidquam nisi pondus iners congestaque eodem
non bene iunctarum discordia semina rerum.

Before the sea and the lands and the sky which covers all things, there was one face of nature in her whole globe, which they called *chaos*: a rough unordered mass, nothing except inactive weight and heaped together the discordant seeds of badly joined together things (1.5-9).

In Ovid's representation of the early universe there is no form of distinction; since everything is mixed up together, the universe lacks the necessary separateness or space for the individuality of identity to emerge or

Callimachus' *Aetia* have already been established, but the importance Aratus, Ennius, as well as Parmenides, Heraclitus and the other Presocratics, may also be considered.

³ Tarrant's OCT capitalizes *chaos*. This is problematic as the treatment of the word *chaos* in the ancient sources often deliberately undermines the distinction between personification and physical state. In view of this it will remain uncapitalized here.

generation to occur.⁴ The adjective *indigestus*, being derived from *digerere*, ‘to force apart’ or ‘separate’, indicates that the mass of *chaos* lacks any form of separation or division. Not only is everything closely packed together, but the elements are described as fighting (*pugnare*) and at war with each other (1.19), and continually transforming into each other and exchanging their qualities, as *nulli sua forma manebat* ‘to none did its form remain’ (1.18). The primary divisions of reality that allow us to form a consistent mental image of the universe are absent, as the sky, sea, and earth do not yet sustain their boundaries, but rather blend into each other. Wheeler (2000, 15-15) observes how each element is neither itself nor its opposite, as the earth, more like water is unstable (*instabilis*), and the sea, more like something solid, is unswimmable (*innabilis*), while the air, whose opposite might be considered darkness and depth, was without light (1.16-17).⁵

2.2 *The Song of Orpheus and Empedocles*

Ovid begins his description of *chaos* with an Alexandrian footnote, whereby he makes an apparent appeal to the general tradition. The unidentified ‘they’ of *quem dixere chaos* cloaks an allusion to a specific author, in this case most likely to be Hesiod.⁶ As both Wheeler (2000, 13) and Ziogas (2013, 1) rightly observe, by simply placing *chaos* at the beginning of his cosmogony Ovid is very deliberately activating an allusion to the $\chi\acute{\alpha}\omicron\varsigma$ of Hesiod’s *Theogony* (116).⁷ Ovid’s portrayal of *chaos* is, however, fundamentally different to that of Hesiod. In the *Theogony* $\chi\acute{\alpha}\omicron\varsigma$ is imagined as a ‘gaping chasm’ or ‘yawning’, a dark space which opens up, and while it likewise marks the beginning of the universe, it is very different

⁴ The idea of the universe being non-reproductive due to the lack of space between its elements or constituent components can be seen as early as Hesiod’s *Theogony*, where Ouranos’ excessive encompassing of Gaia prevents the in between space needed for generation to occur (156-60). West (1966, 193) compares *chaos*, as a gaping chasm in the *Theogony*, to the space which opens up between Gaia and Ouranos after his castration.

⁵ There is the possibility that the state of fluctuation between elemental bodies is likewise captured in the verse as *instabilis* easily becomes *innabilis*.

⁶ The Alexandrian footnote is discussed further in the Introduction §2.2.

⁷ Wheeler (2000, 13): ‘By beginning from *chaos*, Ovid aligns his poem with a tradition that can be traced back to Hesiod’s *Theogony*’.

from the primordial mixture of elements that we find in the *Metamorphoses*.⁸ In the *Theogony* χάος is essentially the space or arena in which creation can begin to occur; while in the *Metamorphoses* chaos is a primordial physical mixture of the material elements which prefigures generation.⁹ In Latin *hiatus* ‘gaping chasm’ is etymologically related to χάος; Lucretius at *DRN* 4.416-17 describing a puddle says that: *despectum praebet sub terras impete tanto, | a terris quantum caeli patet altus hiatus* ‘it offers a prospect beneath the earth of a reach as great as that with which the yawning spaces of the sky open out above’. Ovid uses *hiatus* in a similar manner to Lucretius at *Fasti* 3.609 where Anna longs for the earth to open wide and swallow her.¹⁰ At *Heroides* 3.63 Briseis longs for a similar fate: *devorer ante, precor, subito telluris hiatu* ‘may I be swallowed up, I pray, in a sudden yawning of the earth’.

A more striking intertext for Ovid’s depiction of *chaos* in the *Metamorphoses* can rather be seen in the primordial universe as portrayed in the Song of Orpheus in Apollonius Rhodius’ *Argonautica*:

Ἦειδεν δ' ὡς γαῖα καὶ οὐρανὸς ἠδὲ θάλασσα,

⁸ KRS (1999, 37) state that χάος originally meant a great yawning or chasm: ‘the noun is derived from √χα meaning gape, gap or yawn as in χαίνειν, χάσκειν’, pointing in particular to Aristophanes (*Birds* 693; *Clouds* 627). KRS (1999 21) also quote Philodemus (*On Piety* 137. 5), who states that Acusilaus says that all things come from *chaos*, which was first. Hesiod (699 ff.) positions Χάος as the gap between the earth and sky and this may have led to its alternate interpretation as ‘air’ or the region in which birds fly as seem in Bacchylides (5. 27), Euripides (fr. 488) and Aristophanes (*Clouds* 424; *Birds* 1218). West (1966, 192) likewise describes Hesiod’s χάος as a ‘yawning space’, but also says that, far from being empty, it is stuffed with darkness and has sufficient substance so as to catch fire. A parody of Orphic cosmogony can be seen in Aristophanes’ *Birds*. After stating that in the beginning there was only χάος, Night, black Erebus and broad Tartarus, and no earth, air nor heaven, the chorus-leader describes the emergence of the winged Eros from the cosmic egg produced by Night.

⁹ McKim (1984, 99) contrasts Ovid’s depiction of *chaos* both with Hesiod’s where it is a ‘gaping chasm’ and ‘any of its calm, homogenous successors in later traditions’ such as Apollonius Rhodius 1.496-98 (see below).

¹⁰ The yawning and swallowing earth at *Fasti* 3.609 and *Heroides* 3.64 may also be allusions to Homeric γαῖα χάνοι (*Il.* 4.182, 8.150).

τὸ πρὶν ἔτ' ἀλλήλοισι μιῇ συναρηρότα μορφῇ,
νεῖκεος ἐξ ὀλοοῖο διέκριθεν ἀμφὶς ἕκαστα.¹¹

He sang how the earth, the sky and the sea, once joined together in one form, were separated out from each other by deadly strife (1.496-98, tr. adapted Hunter 1993).

Like in the *Metamorphoses*, the initial state of the universe in the Song of Orpheus is one where the elements are mixed together in a single form. The tripartite division of the universe into ‘earth, sky and sea’, is recalled at *Met.* 1.5, as Ovid introduces his description of *chaos* by positing the same demarcation: *ante mare et terras et quod tegit omnia caelum* ‘before the sea and the lands and the sky which covers all things’. The *unus vultus* ‘single face’ of Ovid’s *chaos* could be alluding to the μία μορφή ‘single form’ into which the elements are joined in the *Argonautica*. As in the *Metamorphoses*, the separating out of the elements from each other in the *Argonautica* allows generation to occur. Wheeler (1995b, 95-6) and Nelis (2009), in particular, have argued that Ovid is alluding to this passage from the *Argonautica*.¹²

Another possible intertext which shares similar features with that of the *Argonautica* may be seen in a fragment of the Euripides’ *Melanippe*, where the term μία μορφή is also used to describe the earth and sky when joined together:

κούκ ἐμὸς ὁ μῦθος, ἀλλ' ἐμῆς μητρὸς πάρα,

¹¹ All displayed quotations of books 1, 2 and 4 of the *Argonautica* follow the 1974 and 2001 Budé editions, while book 3 follows Hunter’s 2008 commentary.

¹² Wheeler (1995b) further argues that Ovid is not only alluding to this passage from Apollonius Rhodius but is deliberately ‘correcting’ it, so as to construct a ‘double allusion’ with the shield of Achilles in the *Iliad* (18.483 ff.). This would correspond to (7) *Double Corrective Allusion* in our taxonomy of intertextual categories. In particular Wheeler points to the similar tripartite demarcation of the universe: ‘Ἐν μὲν γαῖαν ἔτευξ', ἐν δ' οὐρανόν, ἐν δὲ θάλασσαν (*Il.* 18.483), arguing that in installing the figure of the demiurge as the force to separate out the universe Ovid is alluding to Homer’s Hephaestus ahead of Apollonius’ νεῖκος.

Chaos and the Primordial Universe

ὡς οὐρανός τε γαῖά τ' ἦν μορφή μία·
ἐπεὶ δ' ἐχωρίσθησαν ἀλλήλων δίχα,
τίκτουσι πάντα κἀνέδωκαν εἰς φάος,
δένδρη, πετεινά, θῆρας οὓς θ' ἄλμη τρέφει
γένος τε θνητῶν.

The account is not my own, but comes from my mother, that Heaven and Earth were once a single form, but when they were parted from each other into two, they bore and delivered into the light all things—trees, winged things, beasts, creatures of the sea, and the race of mortals (fr. 484 Collard 2008b).

As in both the *Metamorphoses* and the *Argonautica*, the primordial universe in the *Melanippe* is depicted as a physical state in which the elements, or the separate regions of space that will result in the formation of the world, have a single form.¹³ The separating out of this primordial state into its physical constituents allows for generation to occur. We have observed how the way in which Ovid introduces *chaos* at the beginning of the *Metamorphoses* cloaks an allusion to the Χάος of the Hesiod's *Theogony*. A similar feature may also be observed in this fragment from the *Melanippe*, as Melanippe states that the account is not her own but comes from her mother. In the *Argonautica* the account of the primordial universe is likewise voiced through the Song of Orpheus. This could suggest that Ovid's statement *quem dixere chaos* is either a standard trope used when giving an account of

¹³ The Neoplatonist Porphyry's *Life of Pythagoras* (44) also contains a similar depiction of the beginning of the universe: 'when the first origin and birth of all things was in confusion, and many things were at the same time mingled together, sown together, and rolled together in the earth, birth and separation gradually took place, animals being born and plants growing up at the same time. Then from the same putrefaction men were born and beans sprouted' (tr. Campbell 2000, 163). Kahn (2001, 133-36) provides a useful discussion of the context in which Porphyry was writing. The Pythagorean and Neopythagorean influences on the *Metamorphoses* will be discussed in the following chapter (§4).

universal origins or that Ovid is more directly alluding to this feature seen in the *Argonautica* and Euripides' *Melanippe*.¹⁴

In the *Argonautica*, νεῖκος 'strife' is the force responsible for the separating out of the elements. This corresponds directly to Empedocles where the elements are likewise separated through the force of strife:

...ἄλλοτε μὲν φιλότῃσι συνερχόμεν' εἰς ἓνα κόσμον,
ἄλλοτε δ' αὖ δίχ' ἕκαστα φορούμενα νεῖκεος ἔχθει, ...

At one time [the elements] coming together by love into one cosmos, and at another time again all being borne apart separately by the hostility of strife (Inwood 28.5-6 / DK 26).¹⁵

In the Empedoclean system the universe goes through cycles with the elements coming together to form a homogenous whole under the influence of φιλότης and then separating out from each other under the influence of νεῖκος.¹⁶ The separating out of the elements in the Song of Orpheus in the *Argonautica* corresponds to the cycle of νεῖκος in Empedocles. Given the similarity of the depiction and phrasing in both passages, particularly through the repetition of ἕκαστα, it is likely that Apollonius is drawing very directly from Empedocles at *Argon.* 1.496-98 (above).

It may be argued that Ovid is also alluding to Empedoclean νεῖκος in his depiction of *chaos* at *Met.* 1.9, which he says is composed of *non bene iunctarum discordia semina rerum* 'the discordant seeds of badly joined

¹⁴ The Song of Silenus in *Eclogues* 6, which is itself alluding to the Song of Orpheus from the *Argonautica*, functions in a similar fashion, on which see further below §4.4.

¹⁵ Unless otherwise stated all passages cited from Empedocles will follow Inwood's (2001) ordering of the fragments with the order of Diels-Kranz provided in second position. Inwood's accompanying translation will also be used throughout, unless where otherwise stated.

¹⁶ We once more have the problem as to whether φιλότης and νεῖκος should be capitalised or not. More so than Ovid's *chaos*, both φιλότης and νεῖκος appear to easily shift between abstract universal forces and personified deities.

together things'.¹⁷ *discordia* is the Latin equivalent of the Greek νεῖκος. Although Ovid is using *discordia* at *Met* 1.9 in an adjectival sense, given that it is specifically referring to the behaviour of the elements in the primordial universe, it is possible that Ovid is implicitly alluding to the cosmic force of Empedoclean νεῖκος. Although Ovid uses *discordia* as a plural adjective referring to *semina*, *discordia* is also the form of the nominative, which the personified *Discordia* would take.¹⁸ This could be read as emphasising the slipperiness between cosmic function and personified deity.

Discordia is also identified with Empedoclean νεῖκος elsewhere in Latin poetry. Hardie (2009, 99) states that the most famous Empedoclean creature in Latin poetry is Ennius' *Discordia*. Hardie points to Ennius' *Annals* where *Discordia* throws Rome into chaos after breaking open the gates of war: *postquam Discordia taetra / Belli ferratos postes portasque refregit...* 'After foul *Discordia* shattered the ironclad doorposts and gates of war' (fr. 225 Skutsch 1985). Skutsch (1985, 394-95) shows how Ennius uses *Discordia* as a personification of Empedocles' νεῖκος, as Ennius realises the cosmic function of νεῖκος in the political arena. Ennius describes *Discordia* as follows: *corpore tartarino prognata paluda virago, / cui par imber et ignis, spiritus et gravis terra* 'a maiden in a military cloak, born with hellish body, of equal proportion with water and fire, air and heavy earth' (fr. 220 Skutsch 1985, tr. Hardie 2009b). Hardie (2009b, 99) shows that the model for this description of *Discordia* is Empedocles, where φιλότης and νεῖκος are given equal status to the four elements over which they exert their separate forces (fr. Inwood 25.18-20 / DK 17).¹⁹ Ovid's use

¹⁷ The phrase *semina rerum* is also a clear allusion to the *DRN* as it is one of Lucretius' terms for atoms. Sedley (1998, 38) provides a list the different terms Lucretius uses for atoms.

¹⁸ Given that Ovid is potentially referring to the goddess *Discordia* by using the plural form of the adjective *discors*, the form *discordia* will be used throughout this discussion.

¹⁹ Empedocles (fr. Inwood 25.18-20 / DK 17): πῦρ καὶ ὕδωρ καὶ γαῖα καὶ ἥερος ἀπλετον ὕψος, | νεῖκος τ' οὐλόμενον δίχα τῶν, ἀτάλαντον ἀπάντη, | καὶ φιλότης ἐν τοῖσιν, ἴση μῆκος τε πλάτος τε: 'fire and water and earth and the boundless height of air; and

of the adjective *discordia* when describing the composition of *chaos* from a mixture of the four elements at *Met.* 1.9 may also be read as a ‘double allusion’ to Empedocles’ *νεῖκος*, but this time coupled with the *Discordia* of Ennius.²⁰ If this is the case then Ovid also transforms the personified figure of Ennius’ *Discordia* back into her former role as a depersonified cosmic force in an Empedoclean style universe.²¹

There is, however, a fundamental difference in Ovid’s depiction of universal creation. In the *Argonautica* and Empedocles, *νεῖκος*, ‘strife’, is the force responsible for the separating out of the universe into its constituent elements; in the *Metamorphoses*, however, it is the figure referred to as the *opifex rerum*, the divine craftsman, who separates out the elements from their initial state of strife: *hanc deus et melior litem natura diremit* ‘god, that is more kindly nature settled the strife’ (1.21).²² Indeed the opposite force to Empedoclean *νεῖκος* is said to maintain the elements’ separation:

quae postquam evolvit caecoque exemit acervo
dissociata locis concordi pace ligavit.

And after unrolling these [the sky, sea and earth] and removing them from the impenetrable heap he bound them [the elements] in their separate places with harmonious peace (1.25).²³

destructive strife apart from these in every respect, and love among them, equal in length and breadth’.

²⁰ Hardie (1995, 210-12) argues in relation to *Met.* 15 that Ovid constructs a ‘double-allusion’ to Ennius and his ‘Greek model’ Empedocles.

²¹ Goldshmidt (2013, 97) shows how Vergil also alludes to fr. 225 of the *Annals* at *Aen.* 7.622, where Saturn’s daughter likewise breaks open the ironclad doors of war: *Belli ferratos rumpit Saturnia postis*. Vergil describes *Discordia* at the entrance to the underworld at *Aen.* 6.280, giving her the snaky hair of the furies.

²² The multiple names by which Ovid refers to the figure of the divine craftsman will be discussed in chapter 4 §3.1. For now he will be referred to as the *opifex rerum*. For the significance of *natura* in this context see further below.

²³ The verb *evolvere* is interesting in this context as it can also be used of the unrolling of a manuscript or to spin the threads of the Fates (*Heroides* 12.4). Nelis (2009, 251) notes how

The separation of the elements is maintained through *concors pax*. If *discordia* looks towards Empedoclean νεῖκος, then *concors pax* is the equivalent of φιλότης. In Empedocles φιλότης is responsible for the drawing of the elements together and mixing them into a single mass; however, in the *Metamorphoses*, the equivalent force, *concors pax*, maintains the element's separation from each other.²⁴ Ovid's *chaos* is infused with and indeed unified through *discordia*, essentially the strife that had previously been responsible for the very breakdown of this unity in Apollonius and Empedocles. If we argue that Ovid's depiction of the primordial universe alludes to that of Empedocles, then Ovid appears to take the force responsible for the separation of the primordial universe and make it function as the force that had bound it together in the first place. Not only is Ovid "correcting" the Apollonian/Empedoclean model, as Wheeler (1995b, 95) states, but he actively reverses the mechanistic function of the universe, by switching the roles of φιλότης and νεῖκος.²⁵

A similar dynamic seems to be at play later in *Met.* 1 when Ovid describes the generation of animals from a mixture of the elements after the flood.²⁶ He states that: *discors concordia fetibus apta est* 'discordant

the transition from *discordia* to *concordia* in the *Metamorphoses* mirrors the similar shifting between νεῖκος, strife, and φιλότης, love, in Empedocles.

²⁴ We have again the difficulty of establishing whether *pax* should be capitalised or not. In the *Fasti* Ovid refers to the personified deity Pax (1.709-22). The ambiguity in the *Metamorphoses* is arguably deliberate, as it allows Ovid to once again question how we are to imagine the forming universe, as populated by deities or governed by abstract scientific processes.

²⁵ Wheeler (1995b, 115) shows how 'this correction raises an important issue. In choosing a divine craftsman, Ovid implicitly rejects the possibility that an erotic principle fosters cosmic order. His allusion to Hesiod's *chaos* in the *Theogony* should call to mind the role that Eros plays in bringing about the evolution of the universe (cf. *Theog.* 120-22). Similarly, the reference to the Apollonian Song of Orpheus and the Empedoclean principle of Strife should alert the reader to the corresponding cosmogonic principle of Love'.

²⁶ This topic is dealt with in detail in chapter 6 §2.

concord is adept at procreation' (*Met.* 1.433).²⁷ Wheeler (2000, 35) suggests that this famous oxymoron also has Empedoclean overtones. He shows how Ovid 'borrows' this phrase from Horace: *quid velit et possit rerum concordia discors, | Empedocles an Stertinium deliret acumen*. 'What is the meaning and what is the effect of the world's discordant harmony, whether it is Empedocles who is mad or the brilliant Stertinus (*Epist.* 1.12.19-20, tr. Davies 2011). This further suggests that Ovid's use of *discordia* and *concordia* in *Met.* 1 also alludes to Empedocles' cosmic principles. It also opens up an additional point of reference, as the passage from Horace provides yet a further avenue through which Ovid potentially looks back towards Empedocles.²⁸

2.3 Alternative Universal formation in the *Fasti* and *Ars Amatoria*

The probable inversion of the cosmic roles of *discordia* and *concordia* in the cosmogony of *Met.* 1 becomes even more apparent if we look at a number of alternative depictions of the primordial universe in Ovid's other works. In the *Fasti* it is clear that the sequence of universal formation follows that of the *Argonautica* and Empedocles. Ovid again describes how the four elements, air, fire, water and earth were at one time huddled together in 'one heap' (*unus acervus*) (1.106). Yet instead of being separated out by the *opifex rerum* or *deus et melior natura*, it is strife that causes the elements to fly apart from each other:

ut semel haec rerum secessit lite suarum
inque novas abiit massa soluta domos, ...²⁹

²⁷ A temple to *Concordia* in Rome was first promised by Marcus Furius Camillus in 367 BC but was not built until 167 BC (Plutarch *Vit. Cam.* 42)

²⁸ The use of the phrase *discordia concors* by Manilius in the *Astronomica* (1.142) is discussed in the excursus following this chapter. Lucan also uses the phrase in the *Pharsalia* (1.98).

²⁹ All displayed quotations from the *Fasti* follow Alton, Wormell and Courtney's 1978 Teubner edition.

When once through the strife of its own elements, the mass dissolved and departed to new homes ... (1.107-8).

Instead of *discordia* mixing the elements together as in the *Metamorphoses*, strife in the *Fasti* is the force which drives them apart.³⁰ This clearly suggests that Ovid in the *Metamorphoses* is very carefully choosing to revise both the Empedoclean/Apollonian universal model and indeed his own alternative depiction of *chaos* in the *Fasti*.³¹ Wheeler (1995b, 96) makes a similar observation: ‘This revision of the Apollonian model [in the *Met.*], striking in itself, is thrown into greater relief by Ovid’s parallel cosmogony in *Fasti* 1, in which he imitates the same passage but maintains, with Orpheus, that strife was the catalyst for the separation of the elements... It appears, then, that Ovid is purposely setting the divine creation in *Metamorphoses* against the evolutionary type of cosmogony exemplified in Apollonius’ *Argonautica* and in his own *Fasti*’.

Ovid’s account of the cosmogony in *Met.* 1 also appears to contrast with the account of universal formation in the *Ars Amatoria*, where *chaos* is depicted not as the primordial state of the universe but the force which retreats in order for creation to occur:

Prima fuit rerum confusa sine ordine moles,
unaque erat facies sidera, terra, fretum;
mox caelum impositum terris, humus aequore cincta est
inque suas partes cessit inane chaos.³²

³⁰ The full implications of Ovid’s presentation of different universal systems in the *Metamorphoses* and *Fasti* will be discussed in detail in chapter 5. *lis* ‘strife’ is also present at *Met* 1.21 as the *opifex rerum* settles this strife when separating and correctly positioning the elements. Green (2004, 77) in relation to *Fasti* 1.107, notes how *lis* is a legal term, which could be translated as ‘lawsuit’.

³¹ For a discussion of the relative chronology of between the *Metamorphoses* and the *Fasti*, see chapter 5 §1.

³² All displayed quotations from the *Ars Amatoria* follow Kenney’s OCT (1961)

First there was a confused shapeless mass of things without order. There was one face for the stars, the earth and sea. Presently the sky was placed on the earth. The ground was surrounded by the waters and empty *chaos* withdrew to its own place (*Ars* 2.467-70).

The depiction of the primordial universe in the *Metamorphoses* reworks a number of aspects of this passage from the *Ars Amatoria*: *moles* is the term used to describe the shapeless mass and here too it is said to have only one face. In referring to *chaos* as *inane* ‘an empty space’ or ‘void’, Ovid suggests a closer link to the ‘gaping chasm’ of χάος in the *Theogony*, while also possibly alluding to the Song of Silenus from Vergil’s 6th *Eclogue* where a great *inane* ‘emptiness’ likewise prefigures universal creation (31-33).³³ Unlike in the *Metamorphoses*, *chaos* in the *Ars Amatoria* is not depicted as the physical state of the primordial universe. Instead of being the physical shapeless mass, *chaos* is the force which must retreat for creation to occur.

If we read *chaos* in the *Ars Amatoria* as a force responsible for a phase in the evolution of the universe, then in fact it most readily corresponds to the principle of φιλότης in Empedocles, which likewise brings all the elements together in a homogenous whole (fr. 28 Inwood above).³⁴ This becomes further apparent when we look at the passage directly preceding the description of the primordial universe in the *Ars Amatoria*. Here Ovid describes lovers quarreling in language which may be recalling the Empedoclean universal cycle. After their dispute, or strife, the lovers unite in embrace and *concordia* is responsible for their attraction: *Illic depositis habitat concordia telis* ‘there *concordia* lives when weapons

³³ This passage from *Eclogue* 6 is discussed in §4.4 (below).

³⁴ Another description of the coming together of the elements under the Empedoclean principle of φιλότης can be seen at fr. Inwood 61.3-6 / DK 35: ἐπεὶ νεῖκος μὲν ἐνέρτατον ἕκετο βένθος | δίνης, ἐν δὲ μέσῃ φιλότης στροφάλιγγι γένηται, | ἐν τῇ δὴ τότε πάντα συνέρχεται ἔν μόνον εἶναι, | οὐκ ἄφαρ, ἀλλὰ θελημὰ συνιστάμεν' ἄλλοθεν ἄλλα. ‘When strife reached the lowest depth of the eddy and love gets into the middles of the whirl, there all these come together to be one alone, not suddenly, but voluntarily coming together, each from a different direction’.

have been laid aside' (*Ars.* 2.463). The description of the primordial universe that follows mirrors the lovers' dispute and shows *concordia* becoming the dominant force in both the human and cosmological sphere.

2.4 The Return of Chaos in Lucan

The notion in the *Ars Amatoria* that *chaos* is a force which must retreat in order for creation to occur suggests a strong hint of its potential return. The more we see possible allusions to Empedocles, the more likely we can view the alternative representations of cosmogony in Ovid's different texts in terms of the cyclical phases of the Empedoclean universe. Turning to reception, Lucan at the beginning of the *Pharsalia* may provide us with independent evidence of an interpretation of the beginning of the *Metamorphoses* which implies the notion that the universe will ultimately return to a state of disorder. Lucan graphically compares the inevitable destruction of Rome to the universe returning to *chaos*. Lucan begins this passage with the phrase *fert animus*, which as Tarrant (2002, 357) states 'must recall the opening of the *Metamorphoses*', before describing *chaos* as follows:

sic, cum conpage soluta
saecula tot mundi suprema coegerit hora
antiquum repetens iterum chaos, [omnia mixtis
sidera sideribus concurrent,] ignea pontum
astra petent, tellus extendere litora nolet
excutietque fretum, fratri contraria Phoebe
ibit et obliquum bigas agitare per orbem
indignata diem poscet sibi, totaque discors
machina divolsi turbabit foedera mundi.

So, when the final hour brings to an end the long ages of the universe, its structure dissolved, reverting to primeval chaos, then fiery stars will plunge into the sea, the earth will be unwilling to stretch flat her shores and will shake the water off, Phoebe will confront her brother and for herself demand the day, resentful of

driving her chariot along its slanting orbit, and the whole discordant mechanism of universe torn apart will disrupt its own laws (1.72-80, ed. Housman 1927, tr. Braund 2008).

Lucan precisely reverses the sequence of the cosmogony in the *Metamorphoses*, as the divisions of the universe are confounded and collapse upon each other. Stoic philosophy, and in particular the notion that the cosmos undergoes periodic cataclysms, may have influenced Lucan here.³⁵ As Tarrant (2002, 358-59) states, it also appears likely that Lucan is alluding to and inverting the account of the primordial universe from the *Metamorphoses*.³⁶ In particular Tarrant points to the image of the earth unwilling 'to stretch out' (*extendere*) the shores of the sea, which he states is an inversion of *Met.* 1.13-14, when the sea had not yet 'stretched out' (*porrexerat*) its arms along the rim of the lands. The passage from the *Pharsalia* clearly illustrates the potential return of *chaos*.

The threat of the return of *chaos* can also be seen later in *Met.* 1 in particular in the Phaethon and Flood narratives, where the stable divisions of the universe are in danger of reverting to their primordial confusion: *si freta, si terrae pereunt, si regia caeli, / in chaos antiquum confundimur*. 'If the seas, the lands and the kingdom of heaven perish, we are mixed in ancient *chaos*' (*Met.* 2.298-99).³⁷ We might again compare the opening of the *Pharsalia* where Lucan describes the confounding of the divisions of the universe. In particular Lucan's description of the return of primeval *chaos* (*antiquum repetens chaos*) may be alluding to the *antiquum chaos* of the *Metamorphoses*.

³⁵ Lapidge (2010, 289-323) examines Lucan's imagery of cosmic dissolution in relation to Stoic theories of periodic cataclysms.

³⁶ In terms of our taxonomy of intertextual categories this most readily corresponds to 6. *Corrective Allusion*.

³⁷ In the *Ibis* (31-40), Ovid begins his curse by stating that the various cosmic opposites would converge and mingle before he would lay down arms against his enemy. He lists the following set of opposing pairs: moisture and fire, the light of the sun and the moon, the east and west winds, the north and south winds, spring and autumn, summer and midwinter, and the smoke from the pyres of Eteocles and Polynices.

3. OVIDIAN *CHAOS* AND LUCRETIAN PHYSICS

3.1 *Mythologizing the Universe*

The *Argonautica* and Empedocles provide a model for the mixture of elements which takes place in the primordial *chaos* of the *Metamorphoses*; however, they do not account for the warring of the elements and the transformations which occur in the primordial state. In Empedocles and the *Argonautica*, while the elements are mixed together, nothing suggests that this state is not peaceful or placid. For a similar picture of a primordial universe, whose constituent elements are at war with each other, we must turn to Lucretius' *De Rerum Natura*. By comparing and contrasting the primordial universe of the *DRN* with that of the *Metamorphoses* we may also see another feature of Ovid's cosmogony brought into greater relief, namely its ability to shift from an abstract scientific picture of the universe to one populated with mythological deities.

After describing the confused mass of *chaos* at *Met.* 1.5-9, Ovid contrasts this description with a picture of the ordered universe that will come into existence. The universe that he proceeds to describe is characterised by the presence of divine personifications:

nullus adhuc mundo praebebat lumina Titan,
nec nova crescendo reparabat cornua Phoebe,
nec circumfuso pendebat in aere tellus
ponderibus librata suis, nec brachia longo
margine terrarum porrexerat Amphitrite.

As of yet no Titan had provided light for the world; nor did new Phoebe grow and so restore her horns, nor was *tellus* hanging in the surrounding air, balanced by its own weight, nor had Amphitrite stretched out her arms around the long edge of the lands (1.10-14).

This personified universe is in stark opposition to the abstract, almost unimaginable, *rudis indigestaque moles* 'unformed, unordered mass' of *chaos* (1.7). While the degree to which *Phoebe* and *Tellus* are personified is

left open, the way in which Amphitrite is said to stretch out her arms around the edges of the lands leaves no doubt that we are meant to imagine her as a fully personified deity. This demonstrates another feature which recurs throughout Ovid's cosmogony, where the universe he is describing frequently switches between mythological and scientific accounts of cosmic formation. This is highlighted in the above passage through the problematisation of the degree to which each deity mentioned is personified or not. The image of *tellus* for instance suspended in the surrounding air suggests a scientific schema of the ordering of the universe, while the proximity of *tellus* to the more fully personified image of Amphitrite questions the degree to which we should actually be visualizing *tellus* as a personified goddess as well. The slipperiness between abstract cosmological forces and fully personified deities appears to emphasize the larger shifts occurring to the generic structure of the cosmogony as a whole, while also destabilizing our perception of the universe.³⁸

This opposition between the abstract and personified universe is made all the more clear if we look at the passage from *DRN* 5 that Ovid is likely to be alluding to, where Lucretius describes the primordial universe:³⁹

Hic neque tum solis rota cerni lumine largo
altivolans poterat nec magni sidera mundi
nec mare nec caelum nec denique terra neque aër
nec similis nostris rebus res ulla videri,
sed nova tempestas quaedam molesque coorta.

³⁸ Kelly (2014) argues that Ovid uses a similar dynamic in the house of *Fama* passage from *Met.* 12. Here Ovid alludes to Vergil's super-corporeal depiction of *Fama* in *Aeneid* 4, however substitutes the body of *Fama* with a detailed description of her house. This in effect causes the goddess *Fama* to become a depersonified and silent figure hidden within the walls of her house, with the house instead alluding to Vergil's depiction of *Fama*'s body.

³⁹ Barchiesi (2005, 153) notes the allusion at *Met.* 1.10-12 to *DRN* 5.432-33; while Hardie (2009b, 144 n.30) also notes how Ovid's anthropomorphizing of the Titan (sun), Phoebe and Amphitrite is in the Empedoclean manner of fr. Inwood 39 / DK 38.4 (see below).

Here, at that time, the wheel of the sun, soaring with abundant light, could not be seen, nor the many stars of the universe, nor the sea, nor the sky, nor even earth, nor the air, nor anything similar to our things; but instead, there was some kind of strange storm and a shapeless mass of every kind of primary particle (*DRN* 5.432-36, tr. adapted Gale 2009).

Here Lucretius describes the world before it takes physical form, when the sun, the stars, the sea, sky and earth could not yet be discerned. He depicts the primordial universe by listing the different physical entities that have yet to come into existence. Ovid uses the same dynamic to describe his primordial universe in the *Metamorphoses*, as he names the different deities which do not yet exist.

Given Lucretius' philosophical standpoint there is little doubt that the universe he is describing is one made up of physical phenomena as opposed to personified deities. Ovid appears to 'remythologize' this passage from Lucretius at *Met.* 1.10-14, as he takes Lucretius' scientific portrayal of the primordial universe and deliberately transforms it into myth, by converting the physical entities of the universe back into deities.⁴⁰ Not only do we see Ovid craftily blending philosophical and mythological discourses, but in choosing to present a world whose elements shift in and out of personification, Ovid is further problematizing our ability to picture a stable universe and indeed categorize the genre of the text. His universe fluctuates

⁴⁰ This is a frequent strategy which Ovid employs when alluding to the *DRN* and most readily corresponds to 6. *Corrective Allusion*. One of best examples of this can be seen shortly before the above passage from the *DRN* in question, where Lucretius rationalizes the story of Phaethon (*DRN* 5.396-410) as an example of universal cataclysm. Ovid in turn appropriates Lucretius' rationalization of the Phaethon story and coverts it back into myth. Myers (1994, 55) states that in the story of *Phaethon*, Ovid 'remythologizes an event natural philosophy had demythologized'. For a detailed argument on this passage, see chapter 4 §4.

between a mythological cosmos populated and composed of deities and a scientific one formed from abstract elemental principles.⁴¹

A potential antecedent for this dynamic, depicting a universe shifting between scientific abstraction and mythological personification, can be found in Empedocles. Hardie (2009b, 144), who also argues that the beginning of Ovid's cosmogony (*Met.* 1-7-14) contains an allusion to Lucretius' primordial universe (*DRN* 5.432-5), shows that in turn the passage from the *DRN* is a 'close imitation' of a passage from Empedocles (Inwood 31 / DK 27).⁴² Here Empedocles describes how the different elements of the universe cannot yet be distinguished in their primordial state:

ἔνθ' οὐτ' ἠελίοιο διείδεται ὠκέα γυῖα
οὐδὲ μὲν οὐδ' αἴης λάσιον μένος οὐδὲ θάλασσα·

There the shining form of the sun is not discerned nor indeed the hairy might of earth, nor the sea (31/27).

This is very similar to Ovid's primordial universe which is likewise without light, the sun, earth, the surrounding air, and sea. The likelihood that Ovid is also alluding to Empedocles at this point is strengthened if we compare another passage from Empedocles which both Hardie (2009b, 144 n.30) and Barchiesi (2005, 153) suggest that Ovid is alluding to at *Met.* 1.10-14:

εἰ δ' ἄγε τοι λέξω πρῶτ' ἐξ ὧν ἥλιος ἀρχὴν
τᾶλλά τε δῆλ' ἐγένοντο τὰ νῦν ἐσορῶμεν ἅπαντα,

⁴¹ Another antecedent for this dynamic may be seen in Prodicus who had a theory that humans deified essential aspects of their daily life and physical surroundings. Sextus Empiricus gives the following summary: 'Prodicus of Ceos says that 'the ancients accounted as gods the sun and moon and rivers and springs and in general all things that are of benefit for our life, because of the benefit derived from them, even as the Egyptians deify the Nile' (*Against the Mathematicians* IX 18 = B5, in: Dillon and Gergel 2003, 110).

⁴² Gale (2009, 141) also notes this potential allusion in this passage of the *DRN* to Empedocles.

γαῖά τε καὶ πόντος πολυκύμων ἠδ' ὑγρὸς ἀήρ
Τιτάν ἠδ' αἰθήρ σφίγγων περι κύκλον ἅπαντα.

Come then! I shall tell you first the sources from which the sun in the beginning and all other things which we now see became clear: earth and billowy sea and moist *aer* and Titan *aither* binding all of them around in a circle (Inwood 39 / DK 38).⁴³

As Hardie (2009b, 144 n.30) notes, Ovid's anthropomorphizing of the Titan (sun), Phoebe and Amphitrite at *Met.* 1.10-14 (above) is strikingly similar to this passage from Empedocles. In particular the image of Amphitrite stretching her arms around the edges of the lands, and the air surrounding the earth (*Met.* 1.13-14) appears to be an allusion to *aither* encompassing the earth, sea, moist *aer*, and sun.⁴⁴ Not only is it likely that Ovid is constructing a *double* or *window* allusion to the above passages from the *DRN* and Empedocles, but Ovid appears to be employing a similar technique which we see in Empedocles, namely switching between abstract physical forces and their corresponding personified deities.

This dynamic can most readily be seen in Empedocles' introduction to the four elemental roots:

⁴³ Kingsley (1995b) argues that this passage from Empedocles has been continually mistranslated. He states that phrase Τιτάν ἠδ' αἰθήρ has generally been understood to mean 'and Titan *aither*' and should rather read 'Titan and *aither*'. If we were to follow Kingsley this could strengthen the connection to the *Metamorphoses* as both Ovid and Empedocles would be using *Titan* to refer to the sun; however, Kingsley's argument is problematic as it would be improbable for *Titan* to be an independent element in the list given by Empedocles without a linking conjunction.

⁴⁴ Cicero (*Phaenomena Aratatea* 589) and Vergil (*Aen.* 4.119) also uses *Titan* for the sun. Kingsley (1995b, 26) notes the evidence which likewise indicates that Empedocles also used Τιτάν when referring to the sun. Kingsley (1995a, 15-35) discusses specifically what Empedocles meant by *aither* and *aer*. Kingsley argues that *aither* was Empedocles' general term for the element air, while *aer* more readily referred specifically moist or damp air such as mist or fog and not to the element air. Kingsley particularly points to the Hippocratic *Airs, Waters, Places* where *aer* is frequently just a term for mist, fog, or the dampness brought by rainy winds. For a full list of references, see Kingsley (1995a, 26).

τέσσαρα γὰρ πάντων ριζώματα πρῶτον ἄκουε·
Ζεὺς ἀργῆς Ἥρη τε φερέσβιος ἠδ' Αἰδωνεύς,
Νῆστις θ', ἣ δακρῦοις τέγγει κρούνωμα βρότειον.

First, hear of the four roots of all things, gleaming Zeus and his life-bringing Hera and Aidoneus and Nestis, who moistens with tears the spring of mortals (Inwood 12 / DK 6).

In this passage Empedocles introduces the four physical elements which constitute matter, but refers to them as personified deities. Kingsley (1995a, 13-14) summarises the difficulty surrounding the interpretation of this passage, where the precise element to which each deity corresponds remains problematic.⁴⁵ This passage clearly shows, however, that at the core of Empedocles' four element theory, he switches between abstract physical elements and personified deities. This slipperiness between the material constituents of the world and personified cosmic principles is strikingly similar to the dynamic we have seen in the *Metamorphoses*. Taken in conjunction with fr. 39/38 (above), which appears to correspond with a precise instance of Ovid engaging in a similar process while alluding to Empedocles, the evidence suggests that Empedocles may have provided a model for Ovid's problematization of cosmological personification in the opening of the *Metamorphoses*.

3.2 The Atomic Storm: Lucretius' Primordial Universe and its Formation

At *DRN* 5.432-36 (above), Lucretius describes how before the universe is formed there is a strange storm and shapeless mass made up of

⁴⁵ It is agreed by both modern and ancient scholars that Nestis corresponds to water and that Aidoneus is an alternative poetic name for the god of the underworld. The other figures remain disputed. In antiquity there were commentators who claimed that for Empedocles Zeus meant fire, Hera earth, and Aidoneus air. Kingsley (1995a, 13ff.) shows how this theory goes back to Theophrastus; however, Kingsley also states that this was not the only ancient theory. Through the influence of Stoicism Hera was identified with air and Aidoneus with earth, while Zeus remained fire.

every kind of atom. This *nova tempestas* ‘strange storm’ and *moles* ‘shapeless mass’ of atoms correspond to Ovid’s primordial *chaos* in the *Metamorphoses*;⁴⁶ *moles* is precisely the term that Ovid uses to describe *chaos* at *Met.* 1.7 and at *Ars.* 2.467. Lucretius describes how the atoms behave in a random manner in this phase of cosmic history; they are carried along in many ways (*multi modi*) and are stirred into motion through many collisions (*plagae*) (5.422-23). The random collisions and movements of the atoms allow for every possible combination to be formed: *omnimodisque coire atque omnia pertemptare, | quaecumque inter se possent congressa creare* ‘and to come together in every way and to try everything, whatever they could create having clashed with each other’ (5.425-26).⁴⁷ In giving rise to every possible form through random combinations, the atoms ultimately stumble across the correct combinations that will bring about the physical universe: *magnarum rerum fiunt exordia saepe, | terrai maris et caeli generisque animantum* ‘[those particles] often become the *exordia* of great things, of the earth, sea and sky, and the race of living beings’ (5.430-31).⁴⁸

The behaviour of the atoms in the primordial universe of the *DRN* corresponds to how Ovid portrays *chaos* as ruled by discord and lacking any stability, where *nulli sua forma manebat* ‘to none did its form remain’ and

⁴⁶ *Tempestas*, while most often used to denote a portion of time, is frequently used by Lucretius (6.376, 458) and others (Vergil *Georgics* 1.311, 2.31) as a ‘violent storm’; this appears to be a special instantiation of a portion of time or season which experiences bad weather such as a storm. Varro (*Lingua Latina* 7.72) discussing *tempestas* states that *intempesta nox*, an un-timely part of the night when nothing happens, is derived from *tempestas*, and *tempestas* from *tempus* ‘time’.

⁴⁷ Garani (2007, 55) shows how this passage from the *DRN* integrates aspects of Empedocles’ philosophy into that of Epicurus.

⁴⁸ We have also seen how *exordia* can mean both a primary constituent such as an atom or the warp threads used to weave a fabric in chapter 2 (§3). Gale (2009, 140) observes that Lucretius’ description of the chaotic behavior of atoms at 5.419-31 ‘weaves together lines repeated from elsewhere in the poem (cf. 1.102108, 2.1058-63 and 5.187-94)... A further metapoetic significance can be detected in the use of repeated lines in this particular context: the recombination of the lines in different permutations reflects the endless mutation of atomic compounds that the lines describe’.

the elements are at war, colliding and transforming into each other. It is apparent that Ovid derives, at least in part, the *non bene iunctarum discordia semina rerum* of *chaos* from the actions of the atoms in the primordial universe of the *DRN*. As we have already seen *semina rerum* is one of Lucretius' terms for atoms, while Lucretius also uses the term *discordia* to describe the conflict in the atoms' behaviour at *DRN* 5.437. This would appear to provide a further model for the elemental warring and transformation that occurs in Ovidian *chaos*.

There are, however, a number of fundamental differences between Ovid's depiction of *chaos* and the primordial universe of Lucretius. After the atoms come together in every possible way, including the *exordia* that will give rise to the earth, sea, sky and living beings, Lucretius describes how the *moles* is separated out. Initially he shows that it is due to the conflict and confusion of the particles, clashing in battle with each other, which causes gaps to emerge:

propter dissimilis formas variasque figuras,
quod non omnia sic poterant coniuncta manere
nec motus inter sese dare convenientis.

On account of their different shapes and changing forms, they could not remain joined together as they were, nor make harmonious movements among each other (5.440-42, tr. adapted Gale 2009).

It is likely that the different shapes and changing forms are again alluded to by Ovid in his depiction of *chaos* where *nulli sua forma manebat* (1.18). In the *DRN*, however this atomic conflict and confusion extends out from the primordial storm of atoms and causes the separating out of the universe. Lucretius' universe is without any controlling mechanism; the random collisions and mixing of the atoms results in the coming together of numerous combinations, when the combinations occur correctly they maintain their form, ultimately resulting in the separating of the universe into its constituent parts.

The general sequence of the formation of the universe in the *Metamorphoses* follows that of the *DRN*, as an initial state of warring confusion gets separated out into its primary constituents, before these constituents get recombined like with like, so as to maintain relatively stable divisions.⁴⁹ The differences between the *DRN* and the *Metamorphoses* lie in the identification of the forces driving this process and the physical constituents themselves. Instead of the chance formation of the universe through the random behavior of atoms that we find in the *DRN*, Ovid's universe is essentially determined, with the controlling principle of the *opifex rerum* performing the separation of the elements which ultimately leads to stable formation. It should also not be overlooked that while Lucretius' primordial universe is composed of warring and mixing atoms or primary compounds of atoms, in the *Metamorphoses* it is the qualities of the elements and not atoms which are in conflict. Ovid opts for Empedoclean elemental properties for the constituents of his universe ahead of Lucretian atoms.

3.3 Separation and Distinction

The random nature of the separating out of the universe in the *DRN* is further emphasized as Lucretius continues to describe how the parts of matter begin to fly apart from each other, resulting in the division of the elements through the process of mutual attraction:

diffugere inde loci partes coepere paresque
cum paribus iungi res et discludere mundum
membraque dividere et magnas disponere partis,
hoc est, a terris altum secernere caelum,
et sorsum mare, uti secreto umore pateret,
sorsus item puri secretique aetheris ignes.

⁴⁹ As we have seen in chapter 2 §3, the different stages in wool-working provides a useful way of conceptualizing this universal process, as the weft and warp threads must be first drawn down and distinguished from the raw clump of wool held on the distaff before being woven into intricate patterns.

In the next place, the parts began to fly apart and like matter to join with like and to divide the world, differentiate its limbs and assign its great parts, that is, to separate the high sky from the earth, and the sea in its own place, so that it might stand open with its moisture separate, and in their own place, likewise the fire of the aether, unclouded and separate (5.443-48, tr. adapted Gale 2009).

Since not all of the atomic combinations can be viable, certain combinations are broken up, which in turn leads to like atoms and combinations coming together, and the partial stability and separation of the current world follows. As the unviable compounds break up, like matter tends towards like resulting in the divisions of the universe with which we are familiar, as the sky, earth, sea and aether gain their assigned position in the cosmos. While the force responsible for the separation of the world is different in the *Metamorphoses*, the demarcation of the universe after the separation recalls *DRN* 5.443-48: *nam caelo terras et terris abscidit undas | et liquidam spisso secrevit ab aere caelum* ‘for he [the *opifex rerum*] divided the sky from the lands and the lands from the waves, and separated the clear sky from the dense air’ (*Met.* 1.22-23). The similarity with *DRN* is striking as Ovid uses the same verb for the separation of the elements, *secernere*, as Lucretius at *DRN* 5.446. Ovid follows the sequence of the development of Lucretius’ anti-teleological universe but installs a divinity to control its formation.

Lucretius pictures universal creation, at least partially, as the formation of a living body, as its *membra* ‘limbs’ begin to be differentiated. Indeed Ovid in turn refers to the universe as a *corpus* within which the elements are at war at *Met.* 1.18, and describes how the unidentified *opifex rerum* divided the mass (*congeries*) into its constituent limbs: *sectamque in membra redegit* ‘having divided it reduced it into limbs’ (1.33).⁵⁰ Empedocles also describes how the universe is divided into its constituent

⁵⁰ Chapter 5 provides a detailed reading of the cosmos as a living body, particularly in relation to the depiction of Janus as an anthropomorphic representation of the universe in *Fast* 1.

limbs. He says that at one time all the limbs (γυῖα) were brought together in one body (σῶμα) under the principle of φιλότης while: ἄλλοτε δ' αὖτε κακῆισι διατμηθέντ' ἐρίδεσσι | πλάζεται ἄνδιχ' ἕκαστα περὶ ῥηγμῖνι βίοιο 'at another time again, being divided by evil quarrels, they [the limbs] wander, all of them separately, about the breaking waves of life' (Inwood 38 / DK 20). Lucretius' description of the formation of the earth, sea, sky and aither at *DRN* 5.443-48 appears to have been influenced by Empedocles' description of their formation under the force of νεῖκος:

ἄρθμα μὲν γὰρ ταῦτα ἑαυτῶν πάντα μέρεσσι,
ἠλέκτωρ τε χθών τε καὶ οὐρανὸς ἠδὲ θάλασσα,
ὄσσα φιν ἐν θνητοῖσιν ἀποπλαχθέντα πέφυκεν.

For these things – the [sun's] gleam and earth and sky and sea – are fitted together with their own parts, which were separated from them and born among mortal things (Inwood 37 / DK 22).

The sun, earth, sky and sea are formed through the coming together of their limbs, which had previously been separated, presumably through the mutual attraction of their 'own' parts.⁵¹ This would appear to be recalled at *DRN* 5.443-48 (above) where the limbs of the world, being the physical regions of the upper air, earth and sea, take shape through a simultaneous process of attraction and separation. Once more Ovid's allusion to *DRN* 5.443-48 (above) corresponds with a potential reference to Empedocles.

The evidence suggests that Lucretius derived his depiction of the primordial universe, and particularly its subsequent formation, at least partially from Empedocles. It is also apparent that Lucretius actively corrected his Empedoclean model. He removes any trace of cosmic principles from his universe and has it function through abstract processes, where like atoms tend to group towards like and unviable compounds do not

⁵¹ Gale (2009, 141) states that Lucretius' description of like matter joining with like matter is 'again reminiscent of Empedocles' cosmogony', pointing in particular to frs. 37/22 and 44/37.

persist. He also changes the primary constituents of the universe from Empedoclean elements to atoms. Ovid extensively alludes to Lucretius' depiction of the formation of the universe in *DRN* 5; however, at precisely the main points of departure that Lucretius makes with Empedocles, Ovid reverts back to the Empedoclean system. It could be argued that Ovid is not only constructing a *double allusion* to Lucretius and Empedocles, but that he devises a *corrective allusion* as well. Ovid opts to retain the cosmic forces and elements of the Empedoclean universe, ahead of the undirected forces which result in the universe's formation from atoms in the *DRN*, as he 're-corrects' the Lucretian system.

4. FURTHER COMPARISONS AND INTERTEXTS

4.1 The Formation of the World in the Speech of Pythagoras

Lucretius continues at 5.449-59 to describe the gradual separation of the earth, aither, air and sea. The heavy earth particles contracted towards the centre, and the more they contracted, the more they squeezed out the lighter particles that would go on to form the sea, the stars, the sun and moon, and the walls of the world, as well as the fiery aither which likewise burst through the earth's pores (*foramina*).⁵² The *Metamorphoses* diverges from the Lucretian model here as Ovid describes the *opifex rerum* rolling the earth into a sphere, before scattering the seas and causing them to swell through raging winds, then encircling the earth (1.34-38).

In the speech of Pythagoras from book 15 of the *Metamorphoses*, however, Ovid gives another account of the formation of the world that more readily corresponds to *DRN* 5.449-59. At *Met.*15.239, Pythagoras states that the eternal world contains four *genitalia corpora* 'generative bodies', which correspond to the four elements, earth, water, air and fire. Although Pythagoras is referring to the Empedoclean elements, *genitalia*

⁵² Kelly (2014, 70-71) argues that Ovid's description of the countless *foramina* which make up the walls of the house of *Fama* in *Met* 12.44 alludes to *DRN* 4.596-601, where Lucretius describes how the voice can pass through bent apertures (*foramina*).

corpora is one of Lucretius' terms for atoms (*DRN* 1.58).⁵³ Pythagoras states that of these four *corpora*, two are heavy, while two are light:

ex illis duo sunt onerosa suoque
pondere in inferius, tellus atque unda, feruntur,
et totidem gravitate carent nulloque premente
alta petunt, aer atque aere purior ignis.

Of these, two are heavy, earth and water, and by their weight they are carried to the lower part, while the same number are free from weight, air and fire which is purer than air, and with nothing pressing them down, they seek the heights (15.240-43).

Earth and water being the heaviest of the elements take the lowest position, while air and aether being the lighter take the higher position. This follows closely the *DRN* where the atoms of earth (*terrai corpora*), being the heaviest, first sink to the bottom: *propterea quod erant gravia et perplexa, coibant / in medio atque imas capiebant omnia sedis* 'because they were heavy and entangled, they all came together in the centre and seized the lowest places' (5.450-51).

Ovid, his voice mediated through Pythagoras, follows once more the process by which the universe starts to gain form in the *DRN*. Ovid returns to a universal model which he appears, at least partially, to have abandoned in his depiction of the formation of the universe in *Metamorphoses* 1. Yet his allusion to Lucretius is imbedded within the Empedoclean context of the speech of Pythagoras.⁵⁴ A stable picture of the universe cannot be sustained even within the text of the *Metamorphoses* itself, as it could even be argued that Pythagoras chooses Lucretius as a source for his depiction of the formation of the universe, ahead of the account given at the start of the *Metamorphoses*. Similar to Ovid's technique of presenting contrastive

⁵³ See Sedley (1998, 38) noted above.

⁵⁴ For the numerous potential allusions in the speech of Pythagoras to Empedocles, see in particular Hardie (1995) and especially the list provided in n.7.

accounts of the formation of the universe in the *Fasti* and *Ars Amatoria*, within the *Metamorphoses* Ovid displays different accounts of universal formation in order to underline the fundamental mutability in both the cosmos and the text.

The controlling agency in the cosmogony of *Met.* 1 when first introduced is referred to as *deus et melior natura* ‘god, that is more kindly nature’ (1.21).⁵⁵ When Pythagoras is introduced in *Met.* 15, it is said that he will reveal the beginnings of the world (*magni primordia mundi*), the cause of things (*rerum causae*) as well as what *natura* is and what *deus* is (15.67-69). When Pythagoras describes the birth of humans he compares *natura* to a divine artist, when freeing the infant body from its mother’s womb: *artifices natura manus admovit* ‘Nature applied her artist’s hands’ (15.218). This clearly pictures *natura* as a personified goddess and strengthens the connection with the figure referred to as the *opifex rerum*, with whom the *deus et melior natura* appears to be identified with in *Met.* 1. This provides a further illustration of the slippage between abstract physical processes and personification, as *natura* shifts from an image of biological birth to being identified as a generative artist.⁵⁶

The identification of *natura* with the *artifex* may also contain an allusion to Cicero’s *De Natura Deorum*, when Balbus recalls Zeno’s definition of *natura*: *Zeno igitur naturam ita definit ut eam dicat ignem esse artificiosum ad gignendum progredientem via* ‘Zeno, then, defines nature like this: he says that it is “the creative fire advancing on its path towards

⁵⁵ It would appear that *deus et melior natura* must be taken as a single entity as it takes a singular verb. Hill (1985, 167) states that in the phrase *et* introduces a synonym, pointing to the two terms being used synonymously in Stoic philosophy, as in Seneca (*Ben.* 4.7.1): *Quid enim aliud est natura quam deus et divina ratio...* ‘for what is Nature other than God and Divine Reason ...?’. We can observe a similar dynamic in Aeschylus’s *Prometheus Bound* in the phrase Θέμις, | καὶ Γαῖα, πολλῶν ὀνομάτων μορφή μία ... ‘Themis, that is Earth, one form with many names’ (211-12).

⁵⁶ The following chapter will further discuss the figure referred to as the *opifex rerum* and his association with the demiurge of Plato’s *Timaeus*.

generation” (2.57, tr. Walsh 1998).⁵⁷ Balbus then states how *natura* surpasses our own handiwork in her creativity before recalling how Zeno also compared *natura* to the demiurge: *natura non artificiosa solum sed plane artifex* ‘nature is not only creative but in fact the craftsman’ (2.58).⁵⁸ Balbus on the one hand identifies *natura* with an abstract creative force operating within universal processes, while on the other hand states that *natura* is the *artifex*, the demiurge and personified generator of the universe and all things in it.⁵⁹ Not only does this suggest that Ovid is alluding to this passage from the *DND* when likening *natura* to the *artifex*, but it also provides us with another example from a philosophical text where scientific abstraction appears to slip into mythological personification and back again.

4.2 *The War of Opposites and the Storm of DRN 6*

As has already been mentioned, one of the fundamental differences between Ovid’s primordial universe and that of Lucretius is that Ovid’s is made up of elemental qualities while Lucretius’ is composed of atoms and compounds. At *Met.* 1.17-20, Ovid details the precise way in which the elemental qualities are mixed together and are continually transforming in the initial state of *chaos*; the emphasis is on the complete lack of corporeal stability and the clashing of the elements:

nulli sua forma manebat,
obstabatque aliis aliud, quia corpore in uno
frigida pugnabant calidis, umentia siccis,
mollia cum duris, sine pondere, habentia pondus.

⁵⁷ McKim (1984, 99) sees Ovid’s *deus et melior natura* as derived from Stoicism and points in particular to the *DND* (1.36-37) where Velleius criticizes Zeno for teaching that the names of the gods are pinned on things without life and speech.

⁵⁸ The following chapter 4 (§ 3.1) further discusses Cicero’s use of the term *artifex* as a translation of Plato’s δημιουργός.

⁵⁹ At *DRN* 2.1090-92 *natura* is described as ruling over the universe and uncontrolled by the gods.

To none did its form remain, and one impeded the others, because in one body, the cold were fighting with the hot, the wet with the dry, the soft with the hard, and the weightless and the heavy (1.17-20).

Stable separation remains absent as the elements are in a continuous state of change and reformation, defying oppositions and warring with each other. The constant mutability of shape (*forma*) echoes the opening lines of the *Metamorphoses* where Ovid had promised to tell us of shapes (*formae*) changed into strange bodies. It is not the elements as such that are at war with each other, but more specifically their qualities: cold, hot, wet, dry, soft, hard, light, and heavy. As the universe lacks any form of stability even the elements are necessarily reduced to their characteristics, with the emphasis on their underlying mutability.⁶⁰

In book 6 of the *DRN*, Lucretius describes violent storms which occur in spring and autumn in his explanation of lightning. These storms, which he calls *tempestas*, the same word which he used for the atomic storm in *DRN* 5, result in a similar clashing of opposing elemental qualities. Within these storms opposing elements clash and are mixed with each other and again both the imagery and language are recalled in Ovid's depiction of *chaos* in the *Metamorphoses*. The storms in the *DRN* occur in spring and autumn because at these times of the year there is a similar coming together of opposing seasonal climates: *quare pugnare necessest dissimilis [res] inter se turbareque mixtas* 'Then it is necessary for opposite things to fight and be mixed in turmoil with each other' (6. 369-70).⁶¹ Ovid also uses the

⁶⁰ The formation and understanding of the world through a series of binary oppositions is common to many of the Presocratics: 'Anaximander is the first in who the concept of opposed natural substances (which recurs in Heraclitus, Parmenides, Empedocles, Anaxagoras, and in the Pythagoreans certainly as early as Alcmaeon) clearly appears' (KRS, 119). Further comparisons are discussed below.

⁶¹ That these storms primarily take place twice a year, in spring and autumn, may also suggest the cyclical nature of the Empedoclean universe, moving through phases of love and strife, summer and winter respectively. Empedocles indeed describes such storms as taking place when strife and love exchange their role as the primary driving force in the

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term *pugnare* to describe how the elements clash in primordial *chaos* (*Met.* 1.19 above); this strengthens the likelihood that Ovid is alluding to this section of *DRN* 6 as well. Lucretius shows how *discordia* is the driving force of these storms: *ut discordia [sit] rerum magnoque tumultu / ignibus et ventis furibundus fluctuet aer.* ‘Then there is a discord of things and through this great confusion, the air surges with fire and raging winds’ (6.366-67).

Lucretius continues in graphic detail to show how the clashing and mixing of the elements in such storms can have almost universal consequences:

nec mirumst, in eo si tempore plurima fiunt
fulmina tempestasque cietur turbida caelo,
ancipiti quoniam bello turbatur utrimque,
hinc flammis, illinc ventis umoreque mixto.

It is no wonder, if at that time there are many thunderbolts and disordered storms are stirred in the sky, because it is thrown in confusion from the war of opposites, on this side flames, while on that side winds and waters mixed (6.375-78, tr. adapted Smith 2001).

The mixing of the opposing elements in these storms creates such turmoil that the universe verges on collapse. In the *Metamorphoses* too, there is the frequent threat of a return to *chaos*, like the seasonal storms of the *DRN* or the cycles in the Empedoclean universe. The threat of the return of *chaos* can be seen in particular in the Phaethon and Flood narratives which follow in the *Metamorphoses*, where the stable divisions of the universe are in danger of reverting to their primordial confusion: *si freta, si terrae pereunt, si regia caeli, / in chaos antiquum confundimur.* ‘If the seas, the lands and

universe. For the comparison between Lucretian and Empedoclean universal storms see below.

the kingdom of heaven perish, we are mixed in ancient *chaos*' (*Met.* 2. 298-99).⁶²

4.3 *The Storm in the Aeneid*

Ovid is not the first to allude to the storm of atoms from the *DRN*. Both Hardie (2009b, 160) and Oliensis (2004, 31) show how the depiction of the storm and shipwreck from the first book of the *Aeneid* (in particular 1.118-19) is derived from *DRN* 2.547-59 where Lucretius uses the analogy of a wreckage of many ships floating in the ocean to depict atoms tossed about in a universal void. The storm in the *Aeneid* results in the clashing of a number of opposing principles. The huge storm clouds take away the sky and remove the distinction between night and day (1.88-89); the surging waves are lifted to the heavens thus eradicating the fundamental division between sea and sky; also the division between sea and land is confounded as the surging of the yawning waves (*unda dehiscens*) reveal the land of the seabed beneath (1.106-7).

Hardie (1986, 107) refers to the storm's confounding of elements in the *Aeneid* as suggesting a 'small-scale chaos', while also showing (191) how the destructive force of the storm can be read in terms of cosmological retrogression.⁶³ When Neptune tries to calm the storm in the *Aeneid*, he says to the winds: *Iam caelum terramque meo sine numine, venti, | miscere, et tantas audetis tollere moles?* 'Winds, do you dare without my will to mix

⁶² We might again compare the opening of the *Pharsalia* (1.72-80 above) where Lucan describes the confounding of the divisions of the universe. In particular Lucan's description of the return of primeval *chaos* (*antiquum repetens chaos*) may be alluding to *Met.* 2. 298-99.

⁶³ Lucretius' depiction of the *nova tempestas* at *DRN* 5.432-5 as well as Virgil's depiction of the storm in *Aeneid* 1 also echo Empedocles' depiction of universe as a swirling whirlpool when the cycle of strife has reached its zenith and love takes over as the driving cosmological force (Inwood 61/DK 35). We should, however, note the differences between Ovidian *chaos* and the swirling whirlpool of Empedocles. Ovid's *chaos* is a state where all matter is closely condensed and mixed up in a single mass and where no room is left for distinction or opposition. The whirlpool of Empedocles, however, displays the opposite cosmological state where all matter is dispersed from each other at the furthest possible distance in the universe, at the swirling edges of the whirlpool.

the sky and the earth and a shapeless-mass springs up' (1.132-33). As Hardie (1986, 191) notes, these lines echo Lucretius' *tempestas* at *DRN* 5.432. Yet it could equally be said that Ovid is alluding to these lines from the *Aeneid* in his depiction of *chaos*. Vergil uses the term *moles* to refer to the storm's 'shapeless-mass', recalling Lucretius' use of this term to describe the storm of atoms, while this is also the term which Ovid uses to describe *chaos* at *Met.* 1.7. Vergil's depiction of elemental confounding may likewise be recalled in the *Metamorphoses* in Ovid's depiction of the clashing of elemental opposites in his primordial universe. The *Aeneid* then, may be positioned as a further intertext to which Ovid may be alluding to in his depiction of *chaos*, expanding the field of reference once more, as the extending out of the universe from primordial *chaos* continues to multiply an ever expanding set of textual resonances.

4.4 *The Song of Silenus*

The connections between the cosmogony of the *Metamorphoses* and the Song of Silenus from Vergil's 6th *Eclogue* have long been observed.⁶⁴ The Song of Silenus begins with a description of the creation of the universe:

Namque canebat uti magnum per inane coacta
semina terrarumque animaeque marisque fuissent
et liquidi simul ignis; ut his exordia⁶⁵ primis
omnia, et ipse tener mundi concreuerit orbis;

For he was singing how through the great emptiness the seeds of
lands, air, sea and flowing fire had been driven together; and how

⁶⁴ For a treatment of the comparisons between *Eclogue* 6 and the cosmogony of *Met.* 1 see in particular Knox (1986, 10-14), Wheeler (1995a, 95-96), and Barchiesi (2005, 148-50). We have already seen in chapter 2 (§2) how Ovid's use of *deducere* is likely to be a *double allusion* to the beginning of *Eclogue* 6 and the prologue of the *Aetia*.

⁶⁵ I follow Coleman 2008 in reading *exordia* instead of *ex omnia*. Clausen (1994, 189-90): of the two ancient MSS which contain this line, P has *ex omnia*, and R *exordia*. *exordia* is found in Macrobius (*Sat.* 6.2.22) and in every medieval MS that has been examined. Despite this Clausen opts for *ex omnia* as he states it is the *lectio difficilior*, but even if it is, the difference in difficulty between the two readings is marginal at best.

from these beginnings all things and the soft globe of the world itself mixed together (6.31-33).

The universe begins to take shape through the converging of the atomic components of the elements, with all things including the world being created from these primary particles (*semina*). As Clausen (1994, 190) demonstrates this passage is rife with Lucretian vocabulary.⁶⁶ Not only do the *semina* clearly suggest Lucretian atoms, but as we have seen in chapter 2 (§3) *exordia* can refer to a primary physical constituent, the basic premise of an argument, as well as the warp threads of the loom.⁶⁷ The fact that the elements appear to converge in order to form the primordial universe in the Song of Silenus could also hint towards the universal cycles in Empedocles, when φιλότης drives the elements back together. That Silenus talks of the *semina* ‘seeds’ of lands, air, sea, and flowing fire may also suggest a combination of the four element theory of Empedocles with Lucretian atomic physics. Given that Silenus is compared directly to Orpheus before beginning his speech, it is likely that Vergil is also alluding to the Song of Orpheus from the *Argonautica*.⁶⁸ The image of the empty space as an arena for creation as well as the list of myths which follow are also likely to be modelled on the *Theogony* combined with the Hesiodic *Catalogue of Women*.⁶⁹

⁶⁶ Clausen (1994, 189) points to the ‘archaic form’ *uti* (31) not used elsewhere in the *Eclogues* but frequent in Lucretius, the plural *terrarium* also frequent in Lucretius. Macrobius identifies a number of Lucretian features including the *liquidus ignis* (6.5.4 quoting *DRN* 6.204-5): *pro “puro” vel “lucido” seu pro “effuso et abundanti,” nisi prior hoc epitheto Lucretius usus fuisset in sexto: Hac etiam fit uti de causa mobilis ille | devolet in terram liquidi color aureus ignis.*

⁶⁷ The *exordia* in this context could be implicitly referring to the beginning of *Eclogue* 6 where Cynthus tells the poet: *deductum dicere carmen* ‘to recite a thin spun poem’. For a discussion of the weaving imagery in this line see chapter 2 §2.

⁶⁸ Knox (1986, 11-12) shows how ‘Vergil calls attention to his model in Apollonius through coincidence of word order and construction: *namque canebat uti...ut::* “Ἡεῖδεν δ’ ὡς...ἦδ’ ὡς.

⁶⁹ Hardie (2005, 288-89) points to the sequence of cosmogony, early history of the world, and a catalogue of myths on largely erotic subjects in *Eclogue* 6 as a ‘general pattern’

Paschalis (2001, 203-4), discussing a number of these potential allusions, draws specific attention to the eclectic nature of the Song of Silenus. Paschalis, comparing this with Ovid's cosmogony, states that 'the metonymic relation between natural philosophy and mythology in the cosmogonical section [of *Eclogue* 6] is not merely a stylistic feature but reflects some sort of compromise between Lucretian (scientific) and Hesiodic (mythological) cosmogonies'. Likewise Knox (1986, 11) describes *Eclogue* 6 as a 'poetic synthesis of different philosophical accounts of the creation. The cosmogony with which the Song of Silenus opens presents poetry as an all-inclusive force, which subsumes the conflicting doctrines of natural philosophy under the heading of a poetry of science'.⁷⁰ As we have seen, Ovid uses a similar dynamic in the cosmogony of the *Metamorphoses*, as he simultaneously integrates elements from different accounts of cosmogony, and frequently switches between mythological and scientific discourse. This could suggest that *Eclogue* 6 provided a miniature model for the type of intertextual programme we have seen Ovid engaged in when describing the formation of the world in the *Metamorphoses*.⁷¹ Similar to the prologue to the *Aetia*, this provides independent evidence of another poet in this case Vergil, operating within the same literary circles engaging in a similar type of allusive activity and precisely at the point of his text which describes the formation of the universe.

which 'coincides with the sequence of *Theogony* followed by *Catalogue*'. Hardie also compares *Eclogue* 6.41-2, *hinc lapides Pyrrhae iactos, Saturnia regna, | Caucasiaeque refert uolucris furtumque Promethei*, which he states may contain further allusions to Hesiod and the *Catalogue*: the Deucalion and Pyrrha narrative appears in the *Catalogue* (fr. 234); Cronus (Saturn) rules over the first golden race of men in the *Works and Days* (109-11); while Prometheus' theft of fire is narrated in both the *Theogony* and *Works and Days*.

⁷⁰ Knox (1986, 12) also compares Ovid's cosmogony to the Song of Silenus, while stating that both *Eclogue* 6 and the cosmogony of *Met.* 1 operate under 'the Alexandrian conception of the universal application of poetry'.

⁷¹ The sequence of the myths which follow the account of universal formation in the Song of Silenus have also been compared with the structure of the opening books of the *Metamorphoses*, as Knox (1986, 13) observes 'Atalanta, Phaethon, Scylla, and Philomela all occur as the subjects of major narratives at important points in Ovid's poem'.

5. CONCLUSION

This chapter has sought to trace the numerous allusions to other texts in Ovid's depiction of *chaos*. It has endeavoured to show that Ovid's depiction of *chaos* consists of a complex series of narrative intertexts deliberately read and filtered through each other. In naming the primordial universe *chaos*, Ovid places his text from the outset in a tradition stemming from the $\chi\acute{\alpha}\omicron\varsigma$ of Hesiod's *Theogony*. It has argued that the homogenous mixture of elemental bodies in Ovid's primordial universe alludes to the Song of Orpheus from Apollonius' *Argonautica*, which is in turn modeled on the Empedoclean cosmos. The presence of *discordia* in the mixture of the elements in the *Metamorphoses* has also been argued to be an allusion to the *Discordia* of Ennius as a personification of the Empedoclean cosmic principle of $\nu\epsilon\tilde{\iota}\kappa\omicron\varsigma$. Ovid's depersonification of Ennian *Discordia* illustrates a further dynamic at play throughout the opening of the *Metamorphoses*; Ovid's primordial universe continually shifts between a world composed of personified deities and a cosmos of abstract scientific principles.

This reading is further underlined when we compare Ovid's primordial universe with that of Lucretius, where Ovid can frequently be observed remythologizing Lucretius' depiction of universal generation. When we compare the primordial universes of the *Metamorphoses* and *DRN*, it becomes clear that Ovid is alluding to the formation of the universe in the *DRN*; however, part of his allusive strategy is to refer to passages in the *DRN* at specific moments when the forces governing the cosmological events which are occurring in the *Metamorphoses* are contrasted with those of the *DRN*. This is likewise seen in Ovid's use of *discordia* as a binding rather than a separating principle. When we compare the primordial universe of the *Metamorphoses* with that of Ovid's own *Fasti*, it becomes clear that Ovid is inverting the cosmic cycle of Empedocles.

Moving to the metaliterary level, Ovid's tactic of incorporating, blending and transforming numerous philosophical, scientific, and literary texts in his representation of *chaos*, could be argued to mirror in his text what is occurring in the primordial universe. The constituents of the text, namely the other universal models which Ovid alludes to, behave within the

framework of the *Metamorphoses* like the elements within *chaos* itself, continually mixing, contrasting, and transforming into each other, as *discors concordia* becomes an expression for both universal creation and intertextuality. The following chapter will continue to discuss the formation of the universe in the *Metamorphoses* as well as a further potential model text for the composition of the Ovidian cosmos, namely Plato's *Timaeus*.

EXCURSUS 2: MANILIUS' COSMOS

We have seen Ovid use the phrase *discors concordia* 'discordant concord' to describe the optimal state for the generation of life after the flood (*Met.* 1.433). We have also seen how this same phrase was used by Horace when referring to Empedocles (*Epist.* 1.12.19-20) and that this allows us to interpret Ovid's use of the phrase at *Met.* 1.433, as well as his description of *discordia semina* (*Met.* 1.9) and *concors pax* (*Met.* 1.25), as alluding to the Empedoclean cosmic principles of φιλότης and νεῖκος. Manilius in the *Astronomica* uses the converse phrase *discordia concors* in a passage which has been read as a summary of the formation of the Empedoclean cosmos.⁷² There would appear to be little difference between the phrases *discors concordia* 'discordant concord' and *discordia concors* 'concordant discord'; however each phrase implicitly refers to a different deity. *Concordia* can mean both the abstract sense of union or harmony as well as the specific goddess, who is the equivalent of the Greek Ὁμόνοια. Similarly *Discordia* can refer both to strife and discord, as well as the goddess who is the equivalent of Ἔρις.

Manilius provides what appears to be a series of summaries of different explanations for the formation of universe corresponding to a number of the main philosophical doctrines and schools. He mentions no philosopher or school by name; however, these doctrines have been identified as follows: a universe without a beginning or an end, as in Xenophanes; a universe arising from *chaos* as in Hesiod; a universe made

⁷² Volk (2009, 1-4) shows how the *Astronomica* of Manilius can be roughly dated to the second decade of the first century AD, based on a number of references to historical events in the text.

up of atoms, as in Democritus, Leucippus and Lucretius; a universe arising from fire, as in Heraclitus; or from water as in Thales (*Astronomica* 1.122-36).⁷³ After providing this summary of the different explanations for the formation of the universe, Manilius gives the following account of what appears to be the Empedoclean system:

aut neque terra patrem novit nec flamma nec aer
aut umor, faciuntque deum per quattuor artus
et mundi struxere globum prohibentque requiri
ultra se quicquam, cum per se cuncta crearint,
frigida nec calidis desint aut umida siccis,
spiritus aut solidis, sitque haec discordia concors
quae nexus habilis et opus generabile fingit
atque omnis partus elementa capacia reddit:

Or it may be that neither the earth, nor fire, nor air, nor water recognised a creator, and they constitute a god from their four limbs and contrived the sphere of the world and prevent anything sought beyond them, having created all things from themselves, so that the cold would not lack hot, nor the wet the dry, nor the airy the hard and so their discord would be harmonious, allowing suitable bindings and generative activity, while the all encompassing elements restore everything brought forth (1.137-44, ed. and tr. adapted Goold 1977)

Manilius states how in this system the four elements do not have an origin and so in effect constitute a god and from them all things are produced. This corresponds to Empedocles fr. Inwood 12 / DK 6, where the elements are

⁷³ A number of further allusions to other theories for the formation and constitution of the universe can be identified in this passage. Those provided here follow the basic examples given by Goold (1977).

given the status of gods and are described as the roots of all things.⁷⁴ Following this Manilius describes a series of opposites, the hot and the cold, the wet and the dry, and the airy and the hard which result from the generation of the elements: *frigida nec calidis desint aut umida siccis, spiritus aut solidis*. He states that these binary oppositions display a harmonious discord (*sitque haec discordia concors*).

Not only does this phrase suggest an allusion to Ovid's *discors concordia*, but Manilius' description of the opposites which result from the elements appears to be modelled upon *Met.* 1.18-20, where Ovid describes how in the single body of *chaos*:

frigida pugnabant *calidis*, *umentia* *siccis*,
mollia cum duris, sine pondere, habentia pondus.

The cold were fighting with the hot, the wet with the dry, the soft with the hard, and the weightless and the heavy (*Met.* 1.19-20).

The correspondence of the terms *frigida*, *calidis*, *umidia* / *umentia* and *siccis* in the same context demonstrates that it is highly likely Manilius derived his depiction of the elemental oppositions from this passage from the *Metamorphoses*, which is further emphasized by his use of the Ovidian phrase *dscordia concors*.⁷⁵ Not only does this show Manilius alluding to Ovid's primordial universe, but if the reader is meant to recognise this chain of intertextual links and the above passage from the *Astronomica* as a summary of the Empedoclean system, it implies that Manilius reads Ovid's cosmogony as essentially Empedoclean. If correct, this provides us with an ancient reading of the *Metamorphoses* which identified Empedoclean elements in Ovid's text. It also shows us another Latin author, more

⁷⁴ fr. Inwood 12 / DK 6 is displayed above in §3.1. For further descriptions of the elements, see also Inwood CTXT 14a and CTXT 18.

⁷⁵ Volk (2009) traces Manilius' intellectual background and states that he knew Ovid's work well and presumably the works of Roman Pythagoreans such as Nigidius Figulus' *Sphaera* (244). Volk (2009, 245-46) and Flores (1995, 28-29) show Manilius (*Ast.* 1.11-19) alluding to the speech of Pythagoras at *Met.* 15.146-49.

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explicitly than Ovid, mixing and blending numerous accounts of the formation of the universe.

Chapter 4: Ovidian *Chaos* and the *Timaeus*

1. INTRODUCTION

Following on from the previous chapter, we will now consider a further potential source for Ovid's representation of the primordial universe in book 1 of the *Metamorphoses*, namely the account of the origin of the universe in Plato's *Timaeus*. We have seen how Ovid adapts material from Empedocles, Apollonius Rhodius and Ennius among others in his account of the primordial universe. We have also seen Ovid alluding to Lucretius' depiction of universal formation and how the *DRN* provided a model from which Ovid derived the sequence for the development of his cosmos; however, Ovid's choice to assign control of the formation of the universe to the figure referred to as the *opifex rerum*, as well as the confounding of elemental qualities that takes place in the *chaos* of *Metamorphoses* 1, are distinctly different from Lucretius' primordial universe, and also differ from the other sources we have discussed so far, and mark a deliberate departure from the world of Lucretian physics.¹ However, a potential correlate for the controlling influence of the *opifex rerum* as well as the mixing of elemental qualities can be found in Plato's *Timaeus*. What follows will be a discussion of whether we can posit any connection between the *Metamorphoses* and the *Timaeus* that would allow us to argue that certain aspects of Ovid's cosmogony may be derived from the *Timaeus*. This will not just involve an examination of correspondences between the cosmologies of the

¹ The various names which Ovid uses to refer to the same divine controlling agency in the universe will be discussed in detail below. For clarity's sake this figure will be referred to as the *opifex rerum* throughout this discussion. Likewise the craftsman god in the *Timaeus*, who also adopts different guises, will be referred to as the δημιουργός. Whether or not we should capitalize the names of these figures in both the *Metamorphoses* and the *Timaeus*, reflects an inherent ambiguity in both texts, as both Ovid and Plato problematize to what extent we are meant to imagine this figure as personified or a deity and to what extent this figure may be considered an abstract force controlling universal processes. The term *demiurge* will be used as an umbrella term when discussing the divine craftsman figure in different or more general contexts.

Metamorphoses and the *Timaeus*, but will also consider the possibility of the transmission of material from the *Timaeus* through subsequent adaptations and other possible intertexts. It will also consider doxographic accounts, including handbooks and commentaries. And more generally it will look at the traditions which stemmed from the *Timaeus* and in particular its influence on Stoicism and Neopythagoreanism, while also considering the tradition within which the *Timaeus* itself operated.

2. DETECTING THE INFLUENCE OF THE *TIMAEUS*

2.1 *The Critical Backdrop and Cicero's Translation*

Robinson (1968) remains the only detailed treatment which argues that Ovid was reading and alluding to the *Timaeus*, if not first hand, at least to Cicero's translation.² Robinson compares the depiction of *chaos* in both the *Metamorphoses* and the *Timaeus* and identifies a number of correspondences, which can be summarized as follows: In both texts *chaos* is not only a mixture and a conglomeration, but is in a state of motion; both include the unnamed figure of the universal craftsman in the guises of the δημιουργός and the *opifex rerum*; and in both texts humans are seen as an image of the immortal gods, shown in the *Metamorphoses* through the upright position given to humans, as they are ordered to gaze at the sky and stars. These correlations as well as further textual parallels will be discussed further below.³

The extant section of Cicero's translation of the *Timaeus* (27d-47b) deals with the δημιουργός, the world-soul, and the origin of the cosmos. Given the strong likelihood that Ovid was familiar with the works of Cicero, presumably it would have been feasible for Ovid to have encountered the

² Wheeler (1995, 96) however, notes that Posidonius remains 'a favourite candidate for Ovid's mix of Platonic and Stoic doctrines'. McKim (1984) also argues that Ovid could have derived all this information from Lucretius and the Stoics.

³ Campbell (2000, 162-65) has also observed a number of connections between the *Metamorphoses* and the *Timaeus*. He emphasizes the connection between metempsychosis and metamorphosis in both texts, as well as the general trajectory of transformation from human to animal and how human metamorphosis into an animal can often be the result of bestial behavior in both texts as well.

Timaeus through this translation. Volk (2009, 241-42) makes a similar argument for the influence of the *Timaeus* on Manilius. Volk recognises that it is difficult, if not impossible, to distinguish whether Manilius is responding directly to Plato's texts or not, or whether the influence which can be detected is purely through the modifications and restatements of these Platonic works in various guises in the period between Plato and Manilius. Volk does however suggest that the strongest suggestion that Manilius would have had direct knowledge of Platonic texts rests again with Cicero's translation of the *Timaeus*, given the likelihood that Manilius knew the works of Cicero directly. The same argument can be applied to Ovid.

Sedley (2013), however, has recently identified a number of difficulties concerning Cicero's translation of the *Timaeus*. Sedley argues that the section of Cicero's translation which survives is not a large fragment of a complete translation of Plato's text; instead Sedley states that it is more than likely that Cicero only meant to translate this specific section. Furthermore he argues that this section was designed to be part of a philosophical dialogue, which would have also included an equally large section from one of Aristotle's works on physics, presumably either the *De Caelo*, possibly accompanied by *Physics* 8, or the *De Philosophia*. Sedley suggests that the work as a whole would have likely been called *De Universitate*, with the character Nigidius (one of the key figures in the revival of Pythagoreanism) voicing the section of the *Timaeus* and a Peripatetic representative voicing the Aristotelian text; this would then have been followed by a critique of both accounts. Sedley further argues that Cicero abandoned this text, so that what we have is a completed section of an incomplete work rather than an accident in the text's transmission. While this presents an interesting hypothesis for explaining the text of Cicero's translation which has come down to us, not enough evidence exists to confirm Sedley's theory.⁴ It must be recognized, however, that if Sedley's

⁴ There are a number of difficulties with Sedley's theory, not least of which is that one of Sedley's arguments for Cicero's abandonment of the this project is that Cicero reuses a couple of lines, word for word from the *Timaeus* (17.14 = 33b) translation again in the *De Natura Deorum* (2.47.11-16). Sedley argues that this goes against Cicero's tendency not to

theory is correct this dramatically reduces the probability for anyone having read Cicero's translation, as it diminishes the likelihood that it would have been circulated.

2.2 *The Commentary Tradition*

To further gauge the likelihood of the reception of the *Timaeus* in Augustan Rome it may be helpful to consider a further avenue by which the *Timaeus* could have been received, namely via the thriving commentary tradition on Plato's text. Eudorus of Alexandria, writing between 50 and 25 BC composed a commentary on the *Timaeus* among many other philosophical works in which he explicitly integrated Pythagorean ideas and Platonic philosophy. Eudorus' commentary is frequently cited in Plutarch's essay *On the Generation of the Soul in the Timaeus*. Kahn (2001, 95-96) states that 'Eudorus' commentary nicely parallels Cicero's contemporary translation from that same dialogue... Both in cosmology and in ethics, Eudorus develops his Platonism in the direction of a transcendental world view conceived as Pythagorean'. Posidonius, writing in the previous half of the first century BC is also believed to have composed a commentary on the *Timaeus*. This commentary was attributed to Posidonius (fr. 85) by Sextus Empiricus (*Adv. Mathematicos*, 7.93); however, this attribution is debated. Ju (2013, 97) points to a number of fragments (28, 31, 49, 85, 141, 149, 205, 291) that illustrate that Posidonius was not only responding to Plato's dialogues and primarily the *Timaeus*, but was also recovering for Stoicism its Pythagorean heritage. These fragments primarily deal with the concept of the soul, with no evidence showing that Posidonius expounded the universal history set out in the *Timaeus*. These texts may well be indicative of a thriving commentary tradition on the *Timaeus* already present in the first century BC, as well as displaying how Neopythagoreanism began to reshape Platonic philosophy. This provides a further potential avenue through which Ovid may have had access to material from the *Timaeus*.

repeat himself and is an example of him raiding material from his abandoned work so that it won't go to waste entirely. This hardly seems like sufficient evidence to support the theory that Cicero abandoned the translation. Hutchinson (2013, 197-98) argues that it is likely that Cicero wrote the translation of the *Timaeus* after the *DND*.

2.3 *Lucretius and Epicurus' Argument against the Timaeus*

In the *De Rerum Natura*, Lucretius presents a number of arguments that appear to be directed against the *Timaeus*. The nature of Lucretius' apparent response to the *Timaeus* may well have a bearing on the hypothesis that Ovid read the *Timaeus* as a unitary text, as it provides a further avenue of indirect access to ideas from the *Timaeus*. Sedley (1998, 152-53) demonstrates in his reconstruction of *On Nature* that Epicurus presented a series of arguments against the *Timaeus* and that Lucretius replicates these arguments in the *DRN*:

One can imagine that Epicurus, in developing his own account of the world's origin in *On nature* xi-xii, felt the need to respond point by point to the *Timaeus*... Lucretius' series of arguments against the divinity of the world – that the world cannot be alive (1.126-55), that the gods cannot have created it, for the lack of either a motive or a model to give them the idea (1.156-94), and that it is not good enough to be divine handiwork (1.195-234), look like a coordinated response to *Timaeus* 29e-30c, where the world is the good product of a benevolent creator, and is animate, being modeled on the ideal Living Being.

Sedley, however, does not go quite as far as to state that Lucretius is responding and alluding to the *Timaeus* directly; rather he leaves it ambiguous as to whether Lucretius derives this response to the *Timaeus* wholly from Epicurus' *On Nature*. If we maintain that Lucretius is following Epicurus' argument against the *Timaeus*, this should not restrict Lucretius from having read the *Timaeus* as well; indeed it could be argued to the contrary that it strengthens the likelihood that Lucretius would have consulted both texts.

Lucretius is primarily arguing against the divine agency fundamentally present in the universe of the *Timaeus* and its formation; although it must also be acknowledged that many of these arguments could be interpreted as equally directed against the Stoic world view, which as we

have seen is frequently at odds with Lucretius' anti-teleological universe.⁵ In the following sections a number of correlations between the *Timaeus* and the *Metamorphoses* will be examined and how these in turn relate to the *DRN*.

3. TEXTUAL PARALLELS

3.1 Naming the Demiurge

One of the obvious correlations between the *Timaeus* and the cosmogony of *Met.* 1 is that both have a divine agency operating key processes in the formation of the universe. Both Plato and Ovid emphasize the ambiguity of this figure's identity by referring to him using multiple titles.⁶ Ovid initially refers to this figure as *deus et melior natura* (1.21) before adopting the titles *mundi fabricator* (1.57) and *opifex rerum* (1.79). In the *Timaeus*, the δημιουργός is likewise referred to as ὁ τεκταίνόμενος (228d6), which Cicero translates as *artifex* (6.7) and *ille fabricator tanti operis (mundi)* (6.3). In Cicero's *De Natura Deorum*, the Epicurean Velleius mocking the spherical shape given to the world in the *Timaeus*, refers to the demiurge as the *opifex aedificatorque mundi Platonis de Timaeo deus* 'the craftsman and builder god of the world in Plato's *Timaeus*' (1.18.6).⁷ It is an attractive possibility

⁵ On Stoic arguments against Epicurean physics see chapter 1 §4.7. Some of the similarities and differences between the world view as held in Stoicism and that set out in the *Timaeus* are discussed below. Long (2009) makes a number of important observations on this topic, where he sets out the primary differences between the Stoic world view and that of the *Timaeus*, particularly in relation to the demiurge and the Stoic divine principle.

⁶ Robinson (1968, 257-58): 'Ovid matches Plato's own ambiguity about the status of the personal principle underlying the formation of the cosmos'. Wheeler (1995b, 96): 'Ovid's conception of a divine *fabricator* is clearly comparable to the demiurge in Plato's *Timaeus* and with Stoic accounts of divine providence'.

⁷ In a fragment from Cicero's *Academica*, presumably from book 2, he states: *non enim vocabulorum opificem sed rerum inquisitorem decet esse sapientem* 'a wise person should be an investigator of nature not a craftsman of names'. Brittain places this as fr. 33 in the unassigned fragments. In a possible allusion to Ovid, the term *opifex rerum* is used by Lucan in the *Pharsalia* where Acoreus, explaining the flooding of the Nile, points to floods in the ancient history of the world which he states the *creator atque opifex rerum* restrained

that Ovid's choice to name his demiurge the *mundi fabricator* and *opifex rerum* is derived from Cicero, if not from his translation, at least in the context of a reference to the *Timaeus* in the *DND*.⁸ Whether or not Ovid wholly derived his knowledge of the *Timaeus* from Cicero, from Plato's text, or any subsequent adaptations or restatement, Ovid places the demiurge in control of the mechanics of the universe. So without necessarily establishing an exact chain of reference, it would appear that Ovid's use of the terms *mundi fabricator* and *opifex rerum* are a means of alluding to the figure of the demiurge in the *Timaeus*.⁹

3.2 *Chaos and the Clash of Opposites in the Timaeus*

In the *Timaeus*, similar to the *Metamorphoses*, Timaeus sketches an image of the nature of the universe πρὶν οὐρανὸν γενέσθαι 'before the heaven was created' (37e2). It is depicted as οὐχ ἡσυχίαν ἄγων 'not at rest', κινούμενον πλημμελῶς 'moving inharmoniously', and ἀτάκτως 'in a disorderly way' (30a 4-5).¹⁰ After explaining the first two principles of the universe, Being and Becoming, Timaeus introduces the third principle which he calls the Receptacle of Becoming, which later becomes identified with space.¹¹ The Receptacle is permanent and unchanging, but provides a

when forming the universe (10.267). Columella (3.10.10) refers to nature as the *rerum aeterna opifex* 'the eternal craftswoman of things'.

⁸ Prior to Ovid, Cicero appears to be the only writer to refer to the demiurge using the terms *opifex* and *fabricator*. The title *Opifex rerum* may also contain an allusion to the *DRN*, as Lucretius himself could easily be titled the Craftsman of Things.

⁹ This may also be interpreted as a means of separating the *opifex rerum* in the *Metamorphoses* from the Stoic divine principle generally referred to as Zeus (Long 2009, 49).

¹⁰ Cicero *Ti.* (9.6-10.1 = 30a-b): *Nam cum constituisset deus bonis omnibus explere mundum, mali nihil admiscere, quoad natura pateretur, quicquid erat, quod in cernendi sensum caderet, id sibi adsumpsit non tranquillum et quietum, sed immoderate agitata et fluitans, idque ex inordinato in ordinem adduxit; hoc enim iudicabat esse praestantius.*

¹¹ The distinction between the two first principles is between the changeless and intelligible model, and the generated and sensible copy.

venue for this initial state of disorder, in which the powers of the elements can be generated and pass away.¹²

Timaeus pictures this Receptacle as filled with a mixture of elemental qualities which he calls δυνάμεις ‘powers’ or μορφαί ‘shapes’. These powers are aspects of the four elements categorized through a series of opposites: θερμὸν ἢ λευκὸν ἢ καὶ ὅτιοῦν τῶν ἐναντίων ‘hot or cold or any of the other opposites’ (50a2-3). Cornford (1935, 178), commenting on why Plato chooses elemental powers over the physical elements, states: ‘the point is that these are not permanent irreducible elements, not “things” with a constant nature’.¹³ Broadie (2011, 188-89) shows how Plato illustrates their physical nature through the linguistic choice of adjectival elemental qualities over named elements. Given that the elements are characterised by their changeability between each other, the use of fixed nouns to categorize them would contradict the fundamental instability of their nature.

In the initial stage of the universe, the Receptacle is filled with these elemental powers which are in a state of turmoil:

διὰ δὲ τὸ μήθ' ὁμοίων δυνάμεων μήτε ἰσορρόπων ἐμπίπλασθαι κατ'
οὐδὲν αὐτῆς ἰσορροπεῖν, ἀλλ' ἀνωμάλως πάντη ταλαντουμένην
σειέσθαι μὲν ὑπ' ἐκείνων αὐτήν, κινουμένην δ' αὖ πάλιν ἐκεῖνα
σειεῖν.¹⁴

¹² On the nature of the Receptacle, see further Broadie (2012, 186-90) and Cornford (1935, 177-88).

¹³ Cornford (1935, 178) also states that by choosing elemental powers as constituents ‘Plato rejects the old Milesian doctrine of a single fundamental form of matter, which was to serve both as the original state of things (ἀρχή) and as the permanent ground (φύσις) underlying change. He also rejects the belief of the pluralists who, in reply to Parmenides, had reduced all change to the rearrangement in space of the four elements (Empedocles) or of ‘seeds’ (Anaxagoras) or of atoms (Leucippus and Democritus). Plato’s position was nearer to that of Heraclitus, who alone had rejected the notion of substance underlying change and taught the complete transformation of every form of body into every other’.

¹⁴ All displayed quotations from the *Timaeus* follow Burnet’s 1978 OCT edition.

Because it was filled with powers that were neither resembling nor evenly balanced, none of it was equal, but swaying unequally in every way, it was shaken by these things, and again being set in motion, shook them back (52e1-5).¹⁵

The implied image is that of the scales of a balance (τάλαντα) swaying out of control. As harmony has yet to be imposed, the elemental powers are continually undergoing random and erratic movements that shake both the elemental powers themselves and the Receptacle around them, so both the scales and its content are disturbed. As in the *Metamorphoses*, *chaos* here is not just matter confounded together in a static homogeneous whole, but is in a state of turmoil continually undergoing movement and change. The movements of the elemental powers cause the Receptacle to adopt the diverse appearances of its constituents, as it ‘seemed to appear multiform’ (παντοδαπὴν μὲν ἰδεῖν φαίνεσθαι) (52e1). Similarly in the *Metamorphoses*, the elements of the primordial universe are likewise without any stable form or appearance (*nulli sua forma manebat*).

3.3 *The Clash of Opposites in the Laws*

Timaeus does not supply a complete list of the elemental powers; instead he summarizes them as the hot, the cold, and the other opposites. A fuller list is provided in the materialists’ doctrine in book 10 of Plato’s *Laws* (889b).¹⁶ Here the Athenian explains how the materialists believe that the elements exist through chance and how their turmoil resulted in the formation of the world:

τύχη δὲ φερόμενα τῇ τῆς δυνάμεως ἕκαστα ἐκάστων, ἢ συμπέπτωκεν ἀρμόττοντα οἰκείως πως, θερμὰ ψυχροῖς ἢ ξηρὰ πρὸς ὑγρὰ καὶ μαλακὰ πρὸς σκληρὰ, καὶ πάντα ὅποσα τῇ τῶν ἐναντίων κράσει κατὰ τύχην ἐξ ἀνάγκης συνεκεράσθη, ταύτη καὶ κατὰ ταῦτα

¹⁵ Translations of longer excerpts from the *Timaeus* have been adapted from Conrford (1935).

¹⁶ Cornford (1935, 199) likewise uses *Laws* 889b to further extrapolate Timaeus’ list of elemental qualities.

οὕτως γεγεννηκέναι τόν τε οὐρανὸν ὅλον καὶ πάντα ὅποσα κατ'
οὐρανόν.

All move by the chances of their several powers, and according as they clash and fit together with some sort of affinity-hot with cold, dry with moist, soft with hard and in other mixtures that result, by chance, of necessity, from the combination of opposites. From these things and in this way the entire world came into being and all things in it (889b5-c3, tr. adapted Cornford 1935).

The powers of the elements form a series of binary oppositions which collide and are confounded with each other. The chance movements of the opposites result in haphazard combinations which ultimately lead to the formation of the universe and all things in it. Plato of course strongly refutes this anti-teleological universe, governed by randomness and without a divine controlling principle.

Ovid's description of the behaviour of the opposite elemental qualities in the primordial universe of *Met.* 1 bears a striking resemblance to this passage from the *Laws* and is worth citing here again:

quia corpore in uno
frigida pugnabant calidis, umentia siccis,
mollia cum duris, sine pondere, habentia pondus.

Because in one body, the cold were fighting with the hot, the wet with the dry, the soft with the hard, and the weightless and the heavy (1.18-20).

Not only are the elemental powers in the *Laws* described as colliding with each other as in the *Metamorphoses*, but the three pairs of opposites, hot/cold, dry/wet and soft/hard are recalled by Ovid and precisely in that order; the fourth opposite pair, heavy/light, which Ovid also includes, is given as the example in the section of the *Timaeus* describing the formation

of the universe through the process of separation: τὰ μὲν πυκνὰ καὶ βαρέα ἄλλη, τὰ δὲ μανὰ καὶ κοῦφα εἰς ἑτέραν ἴζει φερόμενα ἔδραν· ‘for the dense and heavy things go to one place, while the light and rare being carried to another place are positioned there’ (53 a1-2).¹⁷ While the behaviour of the elemental qualities in Ovid’s primordial universe shares these features with this passage from the *Laws*, Ovid does not follow the materialists in having the universe result from the erratic behaviour of the elemental qualities. Instead, as we have seen, Ovid more directly follows the system in the *Timaeus*, as the *opifex rerum* must step in and impose order upon the previously chaotic universe.

If we argue that Ovid is responding to this passage from the *Laws*, how do we resolve this with the fact that the general sequence of events more readily follows the *Timaeus*, as Ovid also opts for a teleological universe? The closeness between the passage in the *Laws* and the *Metamorphoses* may indicate that Ovid is in some way familiar with both the *Timaeus* and the *Laws*. He could be alluding to a text, which is either itself modelled on this passage from the *Laws*, or is part of the materialists’ doctrine that Plato is referring to. It could also suggest that Ovid is depending on something more like a Platonic digest containing elements from the *Timaeus* and the *Laws*, or it could suggest that Ovid is responding to a commentary; if a commentator needed to explain what Timaeus was referring to when he mentioned the hot, the cold, and the *other* opposites, it could easily be imagined that he would direct the reader to the above passage from the *Laws*.¹⁸

¹⁷ Anaximander appears to be the first of the Presocratics to propose a concept of opposed natural substances, which recurs in Heraclitus, Parmenides, Empedocles, Anaxagoras, and in the Pythagoreans at least as early as Alcmaeon (KRS 119). In the *Metaphysics* (986a22-26), Aristotle provides a summary of Pythagoreanism which includes a table of opposites: limit and unlimited, odd and even, one and plurality, right and left, male and female, resting and moving, straight and curved, light and darkness, good and bad, square and oblong (KRS 238).

¹⁸ The excursus following chapter 3 showed Manilius in the *Astronomica* providing a similar list of elemental powers in an Empedoclean context.

In Plato's *Symposium*, Eryximachus provides another list of opposites in his argument against the Heraclitean principle that harmony and discord can coexist. Eryximachus states that the δημιουργός must be able to make the things that are most at enmity in the body into φίλα 'friends', and proceeds to give a number of examples: ἔστι δὲ ἔχθιστα τὰ ἐναντιώτατα, ψυχρὸν θερμῶ, πικρὸν γλυκεῖ, ξηρὸν ὑγρῶ, πάντα τὰ τοιαῦτα: 'The most opposite things are the most hostile, cold and hot, bitter and sweet, dry and wet and all others such as these' (186d 6-e 1). The power of the δημιουργός to resolve these oppositions into a harmonious universe is also the general trajectory of creation that we find in the *Timaeus* and the *Metamorphoses*, and again illustrates yet another iteration of Plato's description of opposing elemental qualities. This could provide another context in which to view the *discors concordia* of the *Metamorphoses*.

3.4 Forming the Universe: Comparisons and Contrasts with the DRN

As Timaeus describes the universe being separated out, the heavy things move to the centre while the light things are swept outwards: τὰ μὲν ἀνομοιότατα πλεῖστον αὐτὰ ἀφ' αὐτῶν ὀρίζειν, τὰ δὲ ὁμοιότατα μάλιστα εἰς ταῦτόν συνωθεῖν, 'the most dissimilar things were separated from each other, while those most alike each other were forced together' (53 a4-6).¹⁹ This corresponds almost exactly to *DRN* 5.449-51 and Pythagoras' account

¹⁹ Timaeus uses the analogy of a winnowing basket to explain how this process works. As the basket is shaken like things tend towards like as the heavier parts clump in the centre, while the lighter parts are shaken towards the outside. The process functions along similar lines to the vortex that can be seen already in Anaximander, whose theory we can see in Aristotle's *De Caelo* (295a9-14): ὥστ' εἰ βία νῦν ἡ γῆ μένει, καὶ συνῆλθεν ἐπὶ τὸ μέσον φερομένη διὰ τὴν δίνησιν· ταύτην γὰρ τὴν αἰτίαν πάντες λέγουσιν ἐκ τῶν ἐν τοῖς ὑγροῖς καὶ περὶ τὸν ἀέρα συμβαινόντων· ἐν τούτοις γὰρ αἰεὶ φέρεται τὰ μείζω καὶ βαρύτερα πρὸς τὸ μέσον τῆς δίνης. Διὸ δὴ τὴν γῆν πάντες ὅσοι τὸν οὐρανὸν γεννῶσιν, ἐπὶ τὸ μέσον συνελθεῖν φασίν· 'so that the if the earth now stays in place by force, it also came together to the centre by being carried there because of a vortex. (For this is the cause that everyone gives, through what happens in water and in air: for in these the larger and heavier objects are always carried towards the centre of the vortex.) Therefore all who generate the heaven say that the earth came together in the centre' (KRS 1957, 127). This passage also bears comparison with the swirling vortex of Empedocles and the storms of atoms and elements (above).

at *Met.* 15.240-43 (chapter 3 §4.1), where the earth is formed through the coming together of heavy (like) particles and their separation from light (unlike) particles. This again indicates how both a teleological and anti-teleological account of universal formation can easily follow the same sequence of events, even if the force governing such events is completely different.

In the *Timaeus*, the *DRN* and the *Metamorphoses* the universe begins in a state of confusion, violence and movement, and shifts towards the formed universe via the separating out of unlike matter and the grouping together of like matter. The similarity which we see in the *Metamorphoses* to the *Timaeus* is not just filtered through the *DRN*. There are a number of aspects of Ovid's universe which, as we have seen, cannot be attributed to the *DRN* but can be to the *Timaeus*. While Ovid closely alludes to the atomic storm of *DRN* 5, unlike Lucretius Ovid chooses to depict his *chaos* as a storm of elemental qualities instead of atoms, just as Timaeus does. The other clear difference is that the universe of the *DRN* is not governed by divine agency, but is instead generated through the random collision of atoms leading to successful combinations, which survive, and unviable combinations, which do not. In contrast the universes of the *Timaeus* and *Metamorphoses* are separated out and given form by the divine agencies of the δημιουργός and *opifex rerum*, respectively.²⁰

3.5 The Elemental Cycle

The most telling comparison between the *Metamorphoses* and the *Timaeus* can be seen in how both Ovid and Plato depict the elements without any form of fixed identity and continually in a process of transforming into each other. Shortly preceding the depiction of *chaos*, Timaeus describes the elemental cycle where the elements transform from one into the other:

²⁰ It could be argued that if Ovid is integrating both material from the *DRN* and the *Timaeus*, he is constructing a *double corrective allusion*, as Ovid takes the primordial universe from the *DRN* and places the demiurge of the *Timaeus* in control over its formation.

πρῶτον μὲν, ὃ δὴ νῦν ὕδωρ ὠνομάκαμεν, πηγνύμενον ὡς δοκοῦμεν
λίθους καὶ γῆν γιγνόμενον ὀρῶμεν, τηκόμενον δὲ καὶ διακρινόμενον
αὐτὸ ταῦτόν τοῦτο πνεῦμα καὶ ἀέρα, συγκαυθέντα δὲ ἀέρα πῦρ,
ἀνάπαλιν δὲ συγκριθέν καὶ κατασβεσθὲν εἰς ιδέαν τε ἀπιὸν αὔθις
ἀέρος πῦρ, καὶ πάλιν ἀέρα συνιόντα καὶ πυκνούμενον νέφος καὶ
ὀμίχλην, ἐκ δὲ τούτων ἔτι μᾶλλον συμπιλουμένων ῥέον ὕδωρ, ἐξ
ὑδατος δὲ γῆν καὶ λίθους αὔθις, κύκλον τε οὕτω διαδιδόντα εἰς
ἄλληλα, ὡς φαίνεται, τὴν γένεσιν.

In the first place, that which we have named water, as we imagine it
hardening, we see it becoming stones and earth, and this same thing,
when dissolving and separating, becoming wind and air; the air on
being ignited becoming fire; and back again, fire on being
compacted and extinguished, returning again into the form of air,
and air coming together again and thickening into mist and cloud;
and from these still, compacted even further into flowing water, and
from water again earth and stones: and in this way transforming into
each other, it appears a cycle of becoming (49b7-c7).

Timaeus describes how each element transforms in a cycle, with earth
becoming water, water air, air aither or fire, and then again in reverse aither
becomes air, air water, and water earth. The result is that the elements lack
any sense of individual form or identity as they are continually in a process
of becoming something else.

In book 15 of the *Metamorphoses*, following directly after his
account of the formation of the world through the processes of the mutual
attraction and separation of its elements (15.240-43 above), Pythagoras
likewise describes how the elements are in a continual state of transforming
into each other:

quae quamquam spatio distant, tamen omnia fiunt
ex ipsis et in ipsa cadunt, resolutaque tellus
in liquidas rarescit aquas, tenuatus in auras

Ovidian *Chaos* and the *Timaeus*

aeraque umor abit, dempto quoque pondere rursus
in superos aer tenuissimus emicat ignes.
inde retro redeunt, idemque retexitur ordo;
ignis enim densum spissatus in aera transit,
hic in aquas, tellus glomerata cogitur unda.

And although they stand apart in space, yet they are all made out of each other and fall back into each other: and earth unfastened is rarefied into clear water, the moisture having been reduced, changes into wind and air, and also, with its weight removed, the air, at its most rare, in turn shoots out into the high fires. Then they return back again, and the same sequence is rewoven. For fire when thickened crosses into dense air, and this into water, and the earth is compressed from water wound together. (15.244-51).

Ovid likewise begins his description of the elemental cycle with earth transforming into water, water into air, air into fire/aither, before depicting the cycle again in reverse. Not only does the sequence in the *Metamorphoses* map easily onto the sequence in the *Timaeus*, as both begin the cycle from the same point, but the construction of the sentence in the *Metamorphoses*, with its frequent use of qualifying participles almost matches word for word this section from the *Timaeus*. In the *Timaeus* water is described as πηγνύμενον ‘hardening’ or ‘fastening’ into earth, while ‘dissolving’ (τηκόμενον) and ‘separating’ (διακρινόμενον) into air; air ‘on being inflamed’ (συγκαυθέντα) transforms into fire; fire ‘on being combined’ (συγκριθέν) and ‘on being extinguished’ (κατασβεσθέν) returns to air; air ‘coming together’ or ‘rejoining’ (συνιόντα) and ‘thickening’ or ‘condensing’ (πυκνούμενον) becomes water. In the *Metamorphoses*, the earth is described as ‘unfastened’ (*resoluta*) when transforming into water; when the water is ‘reduced’ or ‘made thin’ (*tenuatus*) it transforms into air;²¹ when the air is ‘most rare’ (*tenuissimus*) it transforms into the aither; aither is then ‘thickened’ (*spissatus*) back into air; and earth is formed from

²¹ It should also be observed that in both cases water is transformed into wind and air.

the waves ‘wound together’ (*glomerata*). Not only are both passages marked by the frequent use of participles, but in both cases these participles illustrate that the change between the elements is dictated by alterations in their density, essentially how closely each is packed together.²² The only significant differences between the two passages are the syntactically complex way in which Timaeus begins his account of the transformation of the elements, by giving the two directions in which water can be transformed, and how Ovid tends to summarize the stages in the second half of the cycle, when the elements return back again.

That it is Pythagoras in *Met.* 15 who describes the cycle of elemental change may itself be a subtle allusion to the *Timaeus* or a Neopythagorean adaptation; Timaeus of Locri was a Greek Pythagorean philosopher and as Sedley (2013, 194) states, by Cicero’s time, the *Timaeus* was ‘widely regarded as a Pythagorean testimony, in which Plato voiced the doctrines of the Pythagorean Timaeus of Locri’.²³ Cicero’s translation of the *Timaeus* is dedicated to Publius Nigidius Figulus, one of the key figures in the revival of Platonism in Rome; if we follow Sedley’s hypothesis, Nigidius would also have been the character to voice the section from the *Timaeus*. The connection between the *Timaeus* and Pythagoreanism and Neopythagoreanism is further discussed in §6.2 (below).

3.6 Alternative Elemental Cycles

The Stoic Balbus in Cicero’s *De Natura Deorum* (2.84) also gives an account of the cycle of elemental change: *nam ex terra aqua ex aqua oritur aer ex aere aether, deinde retrorsum vicissim ex aethere aer inde aqua ex*

²² The cycle of phases from more to less dense and vice versa also mirrors the general sequence of the universal cycles in Empedocles, where the universe contracts and comes together under the force of Love yet expands and moves apart under the force of Strife.

²³ In the *Tusculan Disputations* (1.39), Cicero states that Plato travelled to Italy to learn from the Pythagoreans: *Platonem ferunt, ut Pythagoreos cognosceret, in Italiam venisse et didicisse Pythagorea omnia primumque de animorum aeternitate non solum sensisse idem quod Pythagoram, sed rationem etiam attulisse*. ‘They say that Plato went to Italy to get to know the Pythagoreans and learned all the Pythagorean doctrines, and was the first not only to take the same view about the immortality of souls as Pythagoras but also to have adduced reasons’ (ed. and tr. Douglas 1985).

aqua terra infima ‘for water is created from earth, air from water, and the aither from the air; and in reverse again, thence air from the aither, water from the air, and lowest earth from water’. The fusion of the universe is maintained by this process, which, if not eternal, Balbus states is exceedingly long-lasting. If we do not fully follow Sedley’s reconstruction of Cicero’s *Timaeus*, and hypothesize that Cicero translated a larger section than what has been transmitted, it is worthwhile considering if Cicero’s description of the elemental cycle in the *DND* may be a pared-down version of the above section from the *Timaeus*.

Lucretius at *DRN* 1.782-88 also gives an account of the cycles of elemental change, in his argument against the four element theory of Empedocles and his followers. Lucretius argues against the notion that the four elements are to be considered primary substances, based upon their cyclical transition: since the four elements transform into each other, they cannot be primary substances and must be composed of other particles, otherwise everything would be completely annihilated through the process of transformation. As we have already seen Lucretius explains the change from one thing into another in terms of atomic rearrangement (chapter 1 §3). In his counterargument to the four element theory, Lucretius provides an account of the elemental cycle; while Lucretius follows the same order of transformation between the elements, he begins the sequence in reverse, starting with fire transforming into air.²⁴

Aristotle (*De Generatione et Corruptione* 2.4, 331a6-332a3) also gives an account of the elemental cycle. Aristotle explains how it is easier for certain elements to transform into one another based upon each element’s own qualities. He shows how the elements are characterized relative to each other by the nature of their opposing qualities; the elements

²⁴ *DRN* 1.782-88: *et primum faciunt ignem se vertere in auras / aeris, hinc imbrem gigni terramque creari / ex imbri retroque a terra cuncta reverti, / umorem primum, post aera, deinde calorem, / nec cessare haec inter se mutare, meare / a caelo ad terram, de terra ad sidera mundi* ‘First they make fire transform into the winds of air, from this rain is born and earth is created from rain; and back again, from the entire earth are returned, first moisture, then air, then fire; things never stop changing between each other, passing from the sky to the earth and from the earth to the stars of the world’.

more easily transform into each other when they have certain qualities which correspond. It is easy for fire, which is hot and dry, to transform into air, which is hot and moist, as this involves only the exchange of a single characteristic. Similarly air (hot and moist) can easily transform into water (cold and moist) and water into earth (cold and dry) and finally earth into fire (hot and dry). Using this series of opposing elemental qualities, Aristotle explains the nature of the cyclical transformation of the elements. This neatly illustrates how the opposing elemental qualities relate to their corresponding elements through the process of transformation.

Aristotle's description of the elemental cycle could also be seen as resembling Lucretius' explanation of elemental transformation through atomic exchange, as the qualities of the elements are rearranged rather than the atoms. Aristotle's account of the elemental cycle is distinctly different from that in the *Timaeus* or the *Metamorphoses*, where the elements transform due to an alteration in density, essentially a loosening or tightening of the material fabric. There may be a subtle hint to the weaving imagery which we examined in chapter 2: Ovid says that the elements are rewoven (*retexitur*) when the cycle is reversed (*Met.* 15.249). As we have seen atomic recombination can be imagined with the analogy of using the same threads to weave different patterned fabrics.²⁵

When we consider Pythagoras' account of the elemental cycle in the *Met.* 15 in relation to the descriptions in the *DRN*, *DND* and Aristotle, it is striking that Ovid's account more closely resembles Plato's text than any of these. The precise textual relationship remains open, particularly given the probability of further adaptations of material from the *Timaeus*, particularly in Neopythagorean literature. Much also depends on how we interpret and reconstruct the version of Cicero's translation of the *Timaeus* which has been transmitted. Added to this we must allow for a text from the New

²⁵ In *DRN* 5 Lucretius describes how dew forms on the land, and lakes and how rivers breathe out a mist, and when these mists gather together in the sky he describes how they form clouds: *omnia quae sursum cum conciliantur, in alto | corpore concreto subtexunt nubila caelum* 'when all this mist is brought together above, up high the clouds are woven under the sky from the condensed bodies' (5.465-66). This could easily be interpreted as a meteorological illustration of the transformation of the elements.

Academics or Stoics such as Posidonius, who may have favoured a further integration of Pythagorean and Platonic philosophy, as well as a Pythagorean text or texts from which the *Timaeus* itself may have drawn from.²⁶

4. PHAETHON AND THE CYCLICAL DESTRUCTION OF THE WORLD

4.1 *Phaethon and the εἰκὼς μῦθος*

On the level of overall literary conception, a more programmatic comparison can be drawn between the *Metamorphoses* and the *Timaeus*. This can be seen in Plato's representation of the *Timaeus* as an εἰκὼς μῦθος (29d2), and the tendency of both Ovid and Plato to engage in a process of 'remythologizing' previous scientific and philosophical literature. Campbell (2000, 164) identifies this comparison as follows: 'Plato remythologizes cosmology previously appropriated from myth by the Presocratics. Ovid in the *Metamorphoses* achieves the same end by the use of scientific terminology applied to mythological cosmology and aetiology'.²⁷ The process of remythologizing scientific discourse can be seen in both Plato's and Ovid's depiction of the story of Phaethon, as an illustration of the potential for the universe to be destroyed through fire.

Towards the beginning of the *Timaeus*, Critias recounts Solon's journey to Egypt and the knowledge that he gained about the history of the

²⁶ Campbell's (2000, 164) observations on the relationship between Pythagorean texts and the *Timaeus* in his discussion of the origin of species by transformation are also applicable here: 'the reconstruction of Pythagorean physics is highly speculative, given the paucity of independent sources and the influence of the *Timaeus* on later commentators, and the question of whether the Pythagoreans had such a scheme of the origin of species by transformation, or whether Plato has grafted a mythological scheme onto Pythagoreansim, is an open one'. We might even consider that some of these passages may have been derived from lost sections of Empedocles, given that Plato draws extensively from Empedocles in the *Timaeus*, that Empedocles was considered to be a Pythagorean, and the frequency by which we see Ovid alluding to Empedocles particularly in *Met.* 15.

²⁷ Campbell (2000, 164) likewise compares the relationship between Vergil and Lucretius: 'It may well be that we see Plato in the *Timaeus* adopting a similar technique to that of Vergil [and indeed Ovid], who remythologizes the cosmology and aetiology that Lucretius had previously appropriated and demythologized'.

world and mankind from the Egyptian high priest. Solon is informed that the history of the world is far older than the Greeks realise and has undergone numerous phases of destruction through both fire and water in the forms of conflagrations and floods. The high priest informs Solon that the story of Phaethon, the child of the Sun who harnessed his father's chariot, but could not control it and so set the earth on fire, is an example of how myth retains a hidden truth about a time in the history of the world when the earth was overtaken by flames: τοῦτο μύθου μὲν σχῆμα ἔχον λέγεται, τὸ δὲ ἀληθές ἐστι τῶν περὶ γῆν κατ' οὐρανὸν ἰόντων παράλλαξις καὶ διὰ μακρῶν χρόνων γιγνομένη τῶν ἐπὶ γῆς πυρὶ πολλῷ φθορά. 'This is told having the shape of myth; but in truth it is a deviation of the bodies that travel in heaven around the earth and a destruction, occurring at long intervals, of things on earth by a great fire' (22c7-d3). The story of Phaethon is revealed to be an account in myth of a period of conflagration, where the earth was burned up through a deviation in the bodies orbiting the earth.

The myth, although obscuring the cause and nature of this event, retains a piece of knowledge of the history of the universe which would otherwise have been lost or forgotten. As he states, the story contains the 'shape', 'form' or possibly even 'the outer shell' of myth (μύθου σχῆμα ἔχον), within which lies a fundamental truth. While it does not recount the exact nature of the event it can provide a means of gaining knowledge that is rooted in, and not restricted by, the medium of discourse. The *Timaeus* in its own claim to be an εἰκὼς μῦθος, a 'likely story' implicitly compares itself to the myth of Phaethon. It provides a means of accessing truth, through the process of imitation, which counteracts the natural limitations of providing an accurate explanation, through discourse and language, by deliberately constructing itself as a myth or story.²⁸ Since it is the copy not the model

²⁸ Brisson (2012, 390-91) shows how the *Timaeus* attempts to be both myth and philosophy: 'Because it appears in the form of a story that describes the making of a god, the world, by another god, the demiurge, the *Timaeus* is akin to a myth (*muthos*) like the one told by Hesiod in the *Theogony*. Yet it also wants to be an explanation (*logos*), backed up by arguments, of the origin of the world in which we live. The major difficulty to be faced by the interpreter of the *Timaeus* resides in the fact that Plato adopts both viewpoints, without really choosing between them. Since, in both cases, we have to do with discourse,

that is perceivable in the schema of the universe, it is fitting that the *Timaeus* should claim to be an εἰκὼς μῦθος.

4.2 *Phaethon in the Metamorphoses and the DRN*

We can observe Ovid using a similar technique in his account of the story of Phaethon from the *Metamorphoses*. Ovid treats the Phaethon story at length, spanning the end of book 1 and the beginning of book 2. Myers (1994, 55) in particular has argued that Ovid's treatment of the myth is a direct response to Lucretius' depiction of Phaethon in *DRN* 5.²⁹ Here Lucretius recounts how it was told (*ut fama est*) by the Greek poets that Phaethon, having taken control of his father's chariot, was not strong enough to keep it on course, which led to him setting the world on fire and himself being destroyed by the thunderbolt (*DRN* 5.396-405).³⁰ After recounting the myth, Lucretius then states that this is merely a poetic depiction which has as its basis a real physical phenomenon:

quod procul a vera nimis est ratione repulsum.
ignis enim superare potest ubi materiai
ex infinito sunt corpora plura coorta;

the question arises of the status of such discourse. The answer is the same in both cases. Since *Timaeus* is talking about the sensible world, which is a mere image of genuine reality, intelligible reality, his myth and his explanation cannot achieve a stable truth, whose object is reality, and they must be content with the likeness (*eikōs*), whose truth can be shaken by persuasion'.

²⁹ Myers (1994, 55): Ovid's Phaethon episode at *Met.* 1.750-2.400, for example, incorporates many echoes of Lucretius' passage at *DRN* 5.396-410, which is pointedly directed against just such mythological accounts. Lucretius rationalizes stories of the flood and fire as mythological allegories of actual temporary victories of the elements water and fire over the other elements with which they are in constant battle. Although the allegorized myth serves as a sort of "illustration" of elemental warfare, it must be recognized as a false poetic depiction of events or natural phenomena'.

³⁰ Lucretius' introduction to the story of Phaethon takes the form of an Alexandrian footnote. The appeal of *ut fama est* to the general tradition cloaks a likely allusion to a specific text. The Alexandrian footnote is discussed further in the Introduction §2.2. Ovid likewise begins the description of the primordial universe with the phrase *quem dixere chaos*. This is discussed in chapter 3 §2.2.

Ovidian *Chaos* and the *Timaeus*

inde cadunt vires aliqua ratione revictae,
aut pereunt res exustae torrentibus auris.

But this is very far removed from true reason. In fact, fire can gain the upper hand when more atoms of its matter have broken out from boundless space; thence its strength abates, overcome in some regard, or else things are destroyed, burned up in scorching winds (*DRN* 5.406-10, tr. adapted Gale 2009).

Having told the story of Phaethon, Lucretius states that it is a myth and far removed from reason; however rather than being just a poetic construction, it contains a hidden layer of truth, as it reveals that the universe can undergo phases of conflagration. Lucretius' rationalization of the myth at this point is remarkably similar to the Egyptian high priest's in the *Timaeus* (22c7-d3 above); while the physical phenomenon that the myth reveals is somewhat different in the *DRN*, the demythologizing strategy is the same, as are the depictions of the cycles of destructive phases, both through fire and water, that precede the account of Phaethon in both the *Timaeus* and *DRN*.

In the *Metamorphoses*, Ovid presents the story of Phaethon, in considerable detail as a myth, without any rationalization. Due (1974, 31-32), Myers (1994, 55), Anderson (1997, 261) and Wheeler (2000, 45) all note a number of allusions in Ovid's depiction of the story to the account of Phaethon from the *DRN*; in particular both Ovid and Lucretius use the epithet *pater omnipotens* to refer to Jupiter at *DRN* 5.399 and *Met.* 2.304. Ovid's depiction of the story of Phaethon may also be read as doublet accompanied by the destruction of the human race through water in the flood narrative of *Met.* 1, and the story of Deucalion and Pyrrha. Lucretius (*DRN* 5.410-15), like both Plato in the *Timaeus* (22b ff.) and Ovid in the *Metamorphoses* (1.291-347), also gives the alternative destruction of the world through water. This shows Ovid providing mythological accounts of the two phases of universal destruction. If we accept that Ovid is alluding to *DRN* 5, then we can see Ovid remythologizing the story of Phaethon, which had been demythologized by Lucretius. Ovid's strategy is much the same as

that of the *Timaeus*, where both the story of Phaethon and indeed the *Timaeus* itself are presented as an εἰκὼς μῦθος, beneath which may lie a fundamental truth.

Zissos and Gildenhard (1999, 34), also pointing to *Timaeus* 22c-23b, note that a ‘reference to Socratic thought looks likely’ in Ovid’s depiction of Phaethon’s chariot losing control.³¹ Indeed Ovid spends considerable length describing how, as Phaethon loses control, the chariot veers off course in different directions (2.201-13), causing the earth to be cracked and scorched: upon seeing the constellation Scorpio, Phaethon drops the reins and the horses wander from their course (*exspatiantur*) dragging the chariot through unfamiliar regions of the sky (201-4); as they veer too close to the earth, mountain tops are set alight, the earth cracks as moisture leaves it, while trees and crops burn; civilizations are also destroyed as the whole world is ignited on every side (205-30); and Tellus fears the return to primeval *chaos* (298-99).³² Not only is this precisely an account of a period in the history of the universe where the earth was brought to ruin through fire, but just as in the *Timaeus*, the myth reveals how these great conflagrations are likewise the result of heavenly bodies veering off course in their path around the earth (22c7-d3 above).

The correspondences between the accounts of Phaethon in the *Metamorphoses* and the *Timaeus* make the strongest case that Ovid is alluding to the *Timaeus*, instead of an intermediary text or texts. It appears reasonably certain that, in whatever state of finish we view Cicero’s translation of the *Timaeus*, it would have begun at 27d with Timaeus’

³¹ Zissos and Gildenhard (1999, 35-36) make a further comparison between the story of Phaethon in the *Timaeus* and the *Metamorphoses*, as both suggest a cosmic and temporal retrogression: ‘The reversal of time and the threatened reversion to *chaos* suggest once again a philosophical correlation of time and the heavens. At *Ti.* 37d-e, Plato observes that “days and nights and months and years did not exist before the heavens came into being”... The result of Phaethon’s haphazard course is a violation of the temporal mechanics of the cosmos, as laid down in such treatises as Plato’s *Timaeus*’.

³² At *Met.* 1.253-58 before the flood, Jupiter first considers destroying humans with thunderbolts, but fears that the aether would catch fire and he remembers that it was in the fates that there would be a time of great conflagration.

discourse, and so would not have included the introductory conversation between Socrates, Hermocrates, Critias and Timaeus, where the account of Phaethon is given.³³ Arguably the most notable comparison between the depictions of the Phaethon myth in the *Timaeus* and the *Metamorphoses* lies not in the narrative but in how and to what means it is presented. Both Ovid and Plato use the story of Phaethon as a foil to illustrate cosmic processes, while integrating the notion of cyclicity into both the universe and the narrative: the high priest reveals to Solon that the story of Phaethon is in fact really about the deviation of a cosmic body that threatened to set the world alight; through a series of internal narrations Solon's account of what he heard from the high priest is relayed by Critias who did not hear it from Solon himself but rather from his own grandfather. We might compare how Ovid's Phaethon narrative appears to be a remythologizing of Lucretius' narrative, which was itself a demythologizing of the story to begin with. If we argue that Ovid alludes not only to Lucretius but to the *Timaeus* as well, then it would appear that Ovid is matching the type of sequential internal narration which we find in the *Timaeus* by generating a series of textual allusions. Both Plato and Ovid evidently use operations within the text to problematize the nature of their own discourse as they emphasise the slippery relationship between science and mythology.³⁴

4.3 Cosmic Destruction in Lucretius and Theophrastus

A number of further points need to be considered in order to decide whether or not Lucretius is likewise alluding to the *Timaeus* in his rationalization of the myth of Phaethon. We have discussed how Lucretius' depiction of the Phaethon narrative in *DRN* 5 neatly corresponds to how the high priest in the *Timaeus* informs Solon that the myth reveals a cosmic event. Sedley (1998, 166-73), however, argues that Lucretius is primarily

³³ Sedley (2013, 200) states that the introductory conversation was omitted 'because the speech was being adapted to furnish a monologue which would itself be a characteristic part of a regular Ciceronian dialogue'.

³⁴ A similar dynamic has been observed in the previous chapter as the cosmogony of *Met.* 1 slips between a mythological universe of personified deities and scientific world of abstract physical processes.

drawing on Theophrastus in his depiction of the cycles of periodic universal destruction. Theophrastus (fr. 184) describes how humankind and the universe undergo phases of destruction through fire and water, which not alone brings the world to the brink of destruction, but destroys the different crafts associated with civilization.³⁵ The argument runs that the world is continually cycling through phases of creation and destruction, and so nothing including the products of human civilization are new but have existed before in previous phases.³⁶ Sedley shows Lucretius directly responding to and countering this passage from Theophrastus as he states that the universe is young and has a beginning, and that we can see this specifically though the absence of stories prior to the Theban and Trojan wars and in the fact that many arts are still being perfected (*DRN* 5.324-34). Immediately following this Lucretius describes how some wrongly believe that humans existed before and were destroyed in turn by conflagrations and floods (5.338-50).³⁷

This neatly corresponds to the passage from Theophrastus; however, Lucretius' use of the Phaethon passage as an example from mythology of an

³⁵ In particular Sedley points to Theophrastus fr. 184 (Fortenbaugh, Huby, Sharples, Gutas 1992) from Philo's *De Aeternitate Mundi* 146-49: 'Destructions of things on land, not all of them together, but of most of them, are attributed to two principal causes, indescribable onslaughts of fire and water; they say each of these descends in turn, after very long cycles of years. So when a conflagration occurs, a stream of fire from heaven is poured out from above and scattered far and wide, spreading over great regions of the inhabited earth... When the greater part of mankind perishes in the ways stated, apart from countless other minor ways, of necessity the crafts fail too; for it is not possible to see knowledge on its own, apart from its practitioner'.

³⁶ Runia (1986, 83-84) argues that Philo rather than Theophrastus is responsible for the paraphrasing of the *Timaeus* in the above section from the *De Aeternitate Mundi* 146-49 (Theophrastus fr. 184).

³⁷ Gale (2009, 135): 'For the sake of argument Lucretius provisionally accepts the Platonic (*Timaeus* 22a-23c, *Laws* 677a ff.) and Aristotelian (*Metaphysics* 12.8.21, *On Philosophy* fr. 13) theory that the world is subject to periodical cataclysms, after which human civilization must develop again from scratch... Even on this view, Lucretius argues, the world cannot last forever, since it would only take a particularly severe disaster to finish it off all together'. On the Stoic accounts of cyclically recurring phases of time see Long and Sedley's (1987, 308-13) collection of source extracts.

account of such a phase of destruction appears to point more directly to the *Timaeus*, given the absence of evidence for such an account in Theophrastus. This could either suggest that (1) Theophrastus also paraphrased the depiction of Phaethon and that this is now lost, or (2) that Lucretius is responding both to the *Timaeus* and Theophrastus' paraphrasing of it, or (3) that Lucretius derived the Phaethon narrative from a lost section of Epicurus' argument against the *Timaeus* in *On Nature* and supplemented this with Theophrastus.³⁸ As we have seen, there is nothing that should prevent us seeing *DRN* 1.126-234 as an orchestrated response against the *Timaeus*; here too it can be argued that Lucretius is not only alluding to this section of the *Timaeus*, but adopting the demythologizing strategy of the Egyptian High Priest in his explanation of the Phaethon narrative. The above evidence suggests that Lucretius is responding to the *Timaeus* while deriving further material from multiple sources.

5. THE *TIMAEUS* AND PYTHAGOREANISM

In order to better understand both the transmission and appropriation of the *Timaeus* as a Pythagorean text and the impact this had on the philosophical tradition inherited in Augustan Rome, the following section will further analyze how material from the *Timaeus* was adopted by Neopythagoreanism. This task is made all the more difficult by the paucity of Pythagorean and Neopythagorean literature. This section will begin by examining a number of correspondences between Pseudo-Aristotle's *De Mundo* and a number of the common themes and images which we have already identified in the *Metamorphoses* and the *Timaeus*. The *De Mundo* may supply us with some evidence for how material from the *Timaeus* was reapplied in a Neopythagorean context, and so may contribute to our understanding as to how the *Timaeus* was received via the Neopythagorean tradition in Augustan Rome.

³⁸ Given that Lucretius is using the arts as a means of deducing the finite history of the universe, it may be worth considering whether his use of material from Theophrastus and the *Timaeus*, is designed to use the text of the *DRN* as a means of displaying his argument, as previous accounts of the conflagration and dissolution of the world get recycled in his text.

5.1 *The Case of Pseudo-Aristotle's De Mundo*

The *De Mundo* (or Περὶ κόσμου) is a short cosmological treatise, which discusses the role of god in the universe. It is addressed to Alexander, 'the best of princes,' usually identified as Alexander the Great. It is almost universally agreed that it is not a genuine work of Aristotle. Proclus (*In Ti.* 3.272, ed. Diehl 1903) is our earliest source to question its authenticity (Kraye 1990, 341); however, prior to this it is likely that the *De Mundo* was considered a genuine work of Aristotle, or at least a work closely associated to him. Evidence for this may be seen in the Latin translation of the *De Mundo* ascribed to Apuleius; in the preface Apuleius states that he is following Aristotle and Theophrastus, indicating that at the very least the text was believed to be closely linked to the Peripatetic school.³⁹

The composition date of the *De Mundo* is still widely disputed, with proposed dates ranging from shortly after Aristotle to well into the second century AD. The text suggests the influence of a number of later philosophical doctrines, which may help in pinning down a rough date for the text. Thom (2014, 5) states that: 'the philosophical position in *De Mundo* differs in some significant respects from that found in other authentic Aristotelian writings'. Thom gives a number of examples of these differences including the doctrine about god's involvement in the cosmos. Thom shows how similarities have been identified with Platonic, Stoic and Neopythagorean doctrines, which he says points to post-Aristotelian influences; however, it is clear that the *De Mundo* is primarily based on the doctrines of Aristotle and the Peripatetic school, with the goal of disguising

³⁹ Thom (2014, 3-4) states in relation to Apuleius' translation that: 'from the closing sentence of the preface, it appears that Apuleius presents this adaptation as his own work in which he will discuss the heavenly systems "following Aristotle, the wisest and most learned of philosophers, and the authority of Theophrastus". This may suggest that Apuleius considers the material of his source to be Aristotelian, but the expression Theophrastean. It therefore appears unlikely that Apuleius thought the original Greek text was written by Aristotle'. It is not completely certain that the Latin translation of the *De Mundo* was written by Apuleius; however the general critical consensus is that the attribution to Apuleius though not definite is likely to be correct.

itself as a genuine Aristotelian text.⁴⁰ Furley (1955) likewise shows that there is clear evidence of Neopythagorean influence and potentially that of Posidonius or his pupil Asclepiodotus. The dating of Neopythagorean ideas is itself inherently problematic given the almost complete lack of written sources; Furley uses the probable Posidonian influence coupled with the latest possible date for the composition of the Latin translation attributed to Apuleius, to place the composition date for the *De Mundo* between 50 BC and 180 AD. Thom (2014, 7) concludes his discussion of the dating of the *De Mundo* by stating that: ‘in view of the fact that the treatise displays tendencies similar to Middle Platonism (i.e. the combination of Platonic, Aristotelian, and Stoic ideas), and that neither Cicero nor Philodemus seems to have known *De Mundo*, a date around the turn of the era seems reasonable, although an earlier date cannot be ruled out’. Apuleius’ belief that the *De Mundo* was a work closely associated with Aristotle should at the very least push it back towards the earlier limits set above. Thom’s and Furley’s analyses would suggest a date roughly contemporary to that of the *Metamorphoses*; however, given the uncertainty of the date of the composition of the *De Mundo*, no argument will be made here to attempt to link the text directly to the *Metamorphoses*, either by dating it before or after Ovid’s text. Instead the comparisons which will be drawn may be used as further evidence of the influence of the *Timaeus* and Neopythagoreanism in Augustan Rome.

The author of the *De Mundo* gives an account of the composition of the universe from opposite elemental qualities, and explains why this does

⁴⁰ Thom (2014, 8), in relation to the authorship, states that ‘the most plausible explanation, however, is that someone from the Peripatetic tradition wrote the treatise and addressed it to Alexander the Great to lend it more credibility’. Furley (1955, 338-39) says that ‘the habit of attributing one’s writings to an older and greater author in the same tradition was particularly common among the Pythagoreans of the Hellenistic age; the author of the *De Mundo* owes much to these Neopythagoreans, and he certainly reproduces enough genuinely Aristotelian thought to make it reasonable that he should wish to usurp Aristotle’s name’.

not dictate that the universe will be destroyed, as some philosophical discourses argue:

Καίτοι γέ τις ἐθαύμασε πῶς ποτε, ἐκ τῶν ἐναντίων ἀρχῶν
συνεστικῶς ὁ κόσμος, λέγω δὲ ξηρῶν τε καὶ ὑγρῶν, ψυχρῶν τε καὶ
θερμῶν, οὐ πάλαι διέφθαρται καὶ ἀπόλωλεν, ...⁴¹

Some people, however, have wondered how the cosmos, if it is composed of the “opposite” principles (I mean dry and wet, cold and hot), has not long ago been destroyed and perished; ... (396a33-35, tr. Furley 1955).

He shows instead how nature may well have a liking for opposites, and that instead of generating discord, the joining of opposites can instead produce harmony.

Ἴσως δὲ τῶν ἐναντίων ἡ φύσις γλίχεται καὶ ἐκ τούτων ἀποτελεῖ τὸ
σύμφωνον, οὐκ ἐκ τῶν ὁμοίων, ὥσπερ ἀμέλει τὸ ἄρρεν συνήγαγε
πρὸς τὸ θῆλυ καὶ οὐχ ἑκάτερον πρὸς τὸ ὁμόφυλον, καὶ τὴν πρώτην
ὁμόνοιαν διὰ τῶν ἐναντίων σημήψεν, οὐ διὰ τῶν ὁμοίων.

But perhaps nature actually has a liking for opposites; perhaps it is from them that she creates harmony, and not from similar things, in just the same way as she has joined the male to the female, and not each of them to another of the same sex, thus making the first harmonious community not of similar but of opposite things (396b7-11, tr. Furley 1955).

He uses the basic opposition of male and female as an example of how in the formation of human society, harmony was created through the coming together of these opposites. This idea is comparable to the *discors concordia*

⁴¹ Thom’s (2014) edition of the *De Mundo* is used throughout; however, in the passages cited in this section, the text is identical to that presented in Furley’s (1955) Loeb.

of the *Metamorphoses*, which as Ovid states is adept at procreation and may be seen as one of the vital principles in the formation of the cosmos (chapter 3 §2.2). At this point Pseudo-Aristotle refers to the controlling principle in his universe as ἡ φύσις. In the *Metamorphoses* the first time a controlling principle is mentioned it is referred to as *deus et melior natura* (1.21).

The author of the *De Mundo* proceeds to give a more detailed description of the opposites and how they come together in harmony to form the organized universe:

Οὕτως οὖν καὶ τὴν τῶν ὅλων σύστασιν, οὐρανοῦ λέγω καὶ γῆς τοῦ τε σύμπαντος κόσμου, διὰ τῆς τῶν ἐναντιωτάτων κράσεως ἀρχῶν μία διεκόσμησεν ἀρμονία· ξηρὸν γὰρ ὑγρῷ, θερμὸν δὲ ψυχρῷ, βαρεῖ τε κοῦφον μιγὲν, καὶ ὀρθὸν περιφερεῖ, γῆν τε πᾶσαν καὶ θάλασσαν αἰθέρα τε καὶ ἥλιον καὶ σελήνην καὶ τὸν ὅλον οὐρανὸν διεκόσμησε μία [ἡ] διὰ πάντων διήκουσα δύναμις, ...

So in the same way one harmony has ordered the structure of everything, I mean heaven and earth and the whole cosmos, through the mixing of the opposite beginnings: dry mixed with wet, hot with cold, light with heavy, straight with curved--the whole of earth and sea, the aether, the sun, the moon and the whole heaven have been set in order by the single power which interpenetrates all things ... (396b23-29, tr. adapted Furley 1955).

The universe results from a mixture of opposing elemental qualities, including: dry and wet, hot and cold, light and heavy, and straight and curved. As we have seen in the *Timaeus* (50a2-3) the opposing elemental qualities are mixed together in the Receptacle of Becoming and from them all things are generated. The extended list provided in the *Laws* includes the opposing pairs: hot cold, dry wet, soft hard (889b5-c3). In the *Metamorphoses* the opposites: are hot cold, dry wet, soft hard, weightless heavy (1.19-20).⁴² The μία ἀρμονία also shows a controlling force in the

⁴² These passages are discussed in detail above (§3.3)

universe comparable to the δημιουργός in the *Timaeus* and the *opifex rerum* in the *Metamorphoses*, although its existence and penetration through all things suggests that it is more closely aligned with the Stoic divine principle.⁴³

The *De Mundo* also provides an account of how the world experiences periods of destruction:

σεισμοί τε γὰρ ἤδη βίαιοι πολλὰ μέρη τῆς γῆς ἀνέρρηξαν, ὄμβροι τε κατέκλυσαν ἐξαιῖοι καταρραγέντες, ἐπιδρομαί τε κυμάτων καὶ ἀναχωρήσεις πολλάκις καὶ ἠπείρους ἐθαλάττωσαν καὶ θάλαττας ἠπείρωσαν, βιαί τε πνευμάτων καὶ τυφόνων ἔστιν ὅτε πόλεις ὅλας ἀνέτρεψαν, πυρκαϊαί τε καὶ φλόγες αἱ μὲν ἐξ οὐρανοῦ γενόμεναι πρότερον, ὥσπερ φασίν, ἐπὶ Φαέθοντος τὰ πρὸς ἕω μέρη κατέφλεξαν, αἱ δὲ πρὸς ἐσπέραν ἐκ γῆς ἀναβλύσασαι καὶ ἐκφυσῆσασαι, καθάπερ τῶν ἐν Αἴτνῃ κρατήρων ἀναρραγέντων καὶ ἀνὰ τὴν γῆν φερομένων χειμάρρου δίκην.

For violent earthquakes before now have torn up many parts of the earth, monstrous storms of rain have burst out and overwhelmed it, incursions and withdrawals of the waves have often made seas of dry land and dry land of seas; sometimes whole cities have been overturned by the violence of gales and typhoons; flaming fires from the heavens once burnt up the Eastern parts, they say, in the time of Phaethon, and others gushed and spouted from the earth, in the West, as when the craters of Etna erupted and spread over the earth like a mountain-torrent (400a25-34, tr. Furley 1955).

⁴³ Pseudo-Aristotle prefigures the description of the opposite elemental qualities by quoting Heraclitus:

Ταῦτό δὲ τοῦτο ἦν καὶ τὸ παρὰ τῷ σκοτεινῷ λεγόμενον Ἡρακλείτῳ· «Συλλάψεις ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συνᾶδον διᾶδον· ἐκ πάντων ἓν καὶ ἐξ ἑνὸς πάντα.» ‘This is precisely what Heraclitus the Dark meant when he said “Junctions are wholes and not-wholes, concord and discord, consonance and dissonance. One out of All; All out of One”’ (369b19-22).

The author of the *De Mundo* describes cataclysmic events such as earthquakes, storms, fires, floods and volcanic eruptions. Earlier at (397a24-b8) he describes how periods of destruction by means of floods, earthquakes and fires are necessary to keep the earth young and relieve it from the burden of generation. Even if these events have a severe impact on the world, they do not threaten its overall stability but instead are vital to its regeneration. This suggests a similar form of periodic phases of near universal collapse which we find in the *Timaeus* and the *Metamorphoses* (§4.1 above).

Arguably the most notable comparison to the passages we have examined from the *Timaeus* and the *Metamorphoses* (above) is the inclusion of the paradigmatic example of Phaethon in the context of cataclysmic events in the *De Mundo*. Phaethon is identified with the flaming fires from the heavens which once burnt up the eastern part of the world. Earlier in the text at 392a19-31, Pseudo-Aristotle provides a description of the ‘Pythagorean’ order of the planets, which Furley (1955, 352) notes was adopted by Aristotle, Eudoxus, Eratosthenes and probably the early Stoics. Phaethon is also named as one of these planetary spheres.⁴⁴ This indicates that the conflagration caused by Phaethon was rationalized in terms of the deviation of one of the planets or heavenly bodies on its path around the earth.

The above arguments, however, must not be pushed too far. The correlations which have been identified between the *De Mundo* and the *Metamorphoses* should not detract from the more direct correspondences identified between the *Metamorphoses* and the *Timaeus*, which we have discussed in this chapter. There are at least as many differences as there are points of comparison between how Pseudo-Aristotle devises his universe and how Ovid describes the cosmogony in the *Metamorphoses*. The above examples show how many of the ideas and imagery which we have

⁴⁴ Starting from the outermost sphere the Pythagorean sequence of planets or heavenly bodies runs as follows: the fixed stars; Phaenon or Cronus; Phaethon or Zeus; Pyroeis, named after Heracles or Ares; Stilbon, which some dedicate to Hermes and some to Apollo; Phosphorus, which some call after Aphrodite others after Hera; the sun; and last the moon.

observed as common to the *Metamorphoses* and the *Timaeus* also exist elsewhere in the tradition. If we consider the above passages to be examples of Neopythagorean elements in the *De Mundo*, then we also have further evidence of how Neopythagoreans adapted and transformed material from the *Timaeus*.⁴⁵ Likewise we might argue that the above passages indicate how elements of the *Timaeus* were appropriated in an Aristotelian context.⁴⁶ Mostly these examples show independent evidence of recurring themes in a parallel discourse with which Ovid may also have had access. They do not necessarily suggest an intermediary text but instead show intersecting points of contact between different texts and philosophical and literary traditions.

6.2 Pythagoreanism in Rome

Kahn (2001, 86-93) discusses the influence of Pythagoreanism in Rome. He shows how this influence would have been felt from an early period, particularly given that the Pythagorean order was based in Magna Graecia.⁴⁷ Kahn (2001, 87) states that ‘Pythagorean (or pseudo-Pythagorean) literature must be the pipeline by which this Platonic cosmology is transmitted to Rome’. Kahn points to Numa as designating ‘the legendary point of connection’ between Pythagoreanism and Rome, the legend which Ovid reproduces in *Met.* 15.⁴⁸ Kahn (2001, 89) also shows how the influence of Pythagoreanism may be seen in Varro and Cicero. Indeed Kahn states that simply by choosing to translate the *Timaeus*, Cicero

⁴⁵ In the Excursus to chapter 5 we see Aristotle in the *De Caelo* (293b30-32) responding to and arguing against the rotation of the earth as explained in the *Timaeus*. A number of comparisons are made with Pythagorean doctrines. Simplicius (512.9-17) commenting on this passage from the *De Caelo* also mentions the *Pythagorica*, a work which he ascribes to Aristotle. The above passages are displayed and discussed in the Excursus.

⁴⁶ Thom (2014, 3) describes the *De Mundo* ‘as an important example of the kind of eclectic popular philosophy found in the Hellenistic-Roman period’.

⁴⁷ Cicero in the *Tusculan Disputations* (4.1.2-3) recounts the prevalence of Pythagoras in Magna Graecia

⁴⁸ Kahn (2001, 87) also discusses Fulvius Nobilior’s *De Fastis*. He states that a late quotation ‘what Fulvius reports from Numa’ probably referred to this work. ‘The quoted passage reflects an astral theology in the tradition of the *Timaeus*, including a reference to “the ineffable father of all things,” in other words, the Platonic demiurge’.

is displaying Pythagorean sympathies and this is further emphasised by his dedication of the translation to Nigidius, a known exponent and key figure in the revival of Pythagoreanism.

Pythagorean influence can already be detected in Roman literature as early as Ennius. The *Annals* opens with the dream of Homer telling Ennius that his soul has passed into Ennius' body via Pythagorean style reincarnation or metempsychosis. Kahn (2001, 87) also identifies Pythagorean elements in another more satirical work of Ennius, the *Epicharmus* (named after the Sicilian comic poet), which expounded another dream, in which Ennius received a cosmic vision after his death (apparently inspired either by Plato's myth of Er or by the vision of Heraclides' Empedotimus).⁴⁹ Kahn states that the few surviving fragments of this work suggest a Stoic theory of elemental change with a Pythagorean flavour. One of the fragments provides an account of the formation of all things from the mixing of opposing elemental qualities:

Quibus iunctis caelum et terra omnia ex se genuerunt, quod per hos
natura 'frigori miscet calorem atque humori aritudinem'.

From a union of these (of cold with heat and of dryness with moisture), sky and earth gave birth to all things from themselves, for it is through these that nature "mingles heat with cold and dryness with moisture" (fr. 2 = Varro *Ling.* 5.60 ed. and tr. adapted Warmington 1935)

⁴⁹ Heraclides of Pontus (c. 390–310 BC) was one of the earlier followers of Plato who 'creatively shaped' Pythagoreanism after Plato (Volk 2009, 244). Heraclides applied and adapted much material from Pythagoreanism, Platonic doctrine and Empedocles. He was the author of a work entitled *On the Pythagoreans*, and it seems Pythagoras frequently figured as a character in his dialogues. Gottschalk (1980) discusses the various aspects of Heraclides' philosophy, including his adapting of Pythagorean ideas and themes (112-127).

Ennius describes how through the joining of opposing elemental qualities the sky and earth produced all things.⁵⁰ This is not only comparable to the formation of the universe in the *Metamorphoses* from the opposites but may also suggest the mixing of elements which takes place after the flood and the spontaneous generation of animals from earth mixed with rain water (*Met.* 1.430-31).

One of the complexities of dealing with Pythagorean influence is the impossibility of distinguishing what might be termed (1) the original thought of Pythagoras and that of his immediate followers, from (2) the ideas interpreted in Platonic texts as being Pythagorean, and in turn from (3) the re-appropriation of Pythagorean ideas by Neopythagoreans following Plato, who filtered their own brand of Pythagoreanism through Platonic texts such as the *Timaeus*. Volk (2009, 242-43) summarises this difficulty well: ‘Many aspects of Platonic cosmology as expressed especially in the *Timaeus* and the *Epinomis* were in antiquity, and are often still today, considered actually ‘Pythagorean’—that is, developed either by Pythagoras (6th CBC) himself or by Pythagorean philosophers of the fifth and fourth centuries... it is unclear whether Pythagoras himself developed any of the more philosophical and scientific ideas ascribed to him, or whether he was primarily the leader of religious cult...’. It is thus difficult to establish the nature and extent of the influence of Pythagoreanism and ‘crucially, it is impossible to tell to what extent Plato and later Platonists, rather than being influenced by Pythagoras, actually “invented” Pythagoreanism by fathering their own ideas on a revered and semi-mythical figure’. We then encounter the further problem when attempting to identify the influence of the *Timaeus* on Roman authors from Cicero onwards, as they are inheriting two parallel traditions which frequently intersect and indeed reinterpret each other.

Given the complexity of the relationship between Platonic and Pythagorean ideas as outlined above, the more we observe Roman writers

⁵⁰ *Epicharmus* fr. 10-14 = Varro *Ling.* 5.65 also gives a portion of the cycle of elemental change as Jupiter whom the Greeks call Aer, which is wind and clouds, and afterwards moisture; out of wetness comes cold, and after that wind is formed, and air once again.

such as Cicero attributing Pythagorean elements and colourings to the *Timaeus* and essentially the more the *Timaeus* is perceived as a Pythagorean text, the stronger the likelihood that Ovid, following in the vein of Cicero and Varro, is appropriating material from the *Timaeus*, particularly in the Pythagorean context of *Met.* 15. In other words, rather than considering that Ovid is responding *either* to Platonic texts such as the *Timaeus* or is accessing such ideas via reiterations in the Neopythagorean tradition, it may be better to posit the general influence of both. If Ovid is alluding to the *Timaeus* then he may well be doing so acutely aware of the complexity of the tradition in which it is situated and the numerous iterations and philosophical adaptations which have resulted from it.

6. CONCLUSION

Ovid's depiction of *chaos* in the *Metamorphoses* prioritizes a strain of philosophical thought filtered through the *Timaeus*. This can be seen in the depiction of the warring of elemental qualities in both the *Metamorphoses* and the *Timaeus*, the connection between which is further strengthened by the presence in both texts of the divine craftsman, in the guises of the *opifex rerum* and δημιουργός. When read next to the *Timaeus*, the continual mutability that takes place throughout the opening of the *Metamorphoses* which simultaneously depicts a world of personified deities and abstract scientific processes may itself be read as an εἰκὼς μῦθος, displaying the instability of both physical and textual form. Ovid's presentation of such a world, lacking any form of corporeal stability, shares a striking similarity with the text of the *Metamorphoses* itself, as constructed from a continually multiplying set of textual allusions, often presented in conflict with each other, yet changing and transforming when viewed through each other.

EXCURSUS 3: PHAETHON IN PHILOSTRATUS

Philostratus in the *Imagines* (1.11) also observes the two different discourses surrounding the story of *Phaethon*, and how the story lends itself to scientific, philosophical, literary, and artistic depiction. Having recalled how Phaethon took his father's chariot and crashed it into the Eridanus river, Philostratus states: ταῦτα τοῖς μὲν σοφοῖς πλεονεξία τις εἶναι δοκεῖ

τοῦ πυρώδους, ποιηταῖς δὲ καὶ ζωγράφοις ἵπποι καὶ ἄρμα ‘for wise men these things are thought to be an excess of fiery stuff, but for poets and painters, simply horses and a chariot’ (21-24, ed. and tr. adapted Fairbanks 1931). Philostratus is not only showing an awareness of both the scientific and literary discourses surrounding the story of Phaethon, but underpins his own narrative with the scientific account, encouraging the reader to interpret it allegorically as an image of a physical phenomenon. The ability for a narrative to slip between modes of discourse could easily appeal to Philostratus, as the *Imagines* shift between modes of representation; Philostratus’ account of Phaethon claims to be a literary representation of a painting. It is possible that Philostratus here is adopting a similar approach to the remythologizing strategy that we find in Ovid’s account of Phaethon.⁵¹ Philostratus states that due to Phaethon’s fall συγχέεται τὰ οὐράνια ‘the heavenly bodies are confounded’ (24). In the *Metamorphoses*, Tellus warns that Phaethon’s chariot threatens to destroy the world: *si freta, si terrae pereunt, si regia caeli, / in chaos antiquum confundimur* ‘if the seas, the earth and the palace of the sky perish, we are confounded in ancient *chaos*’ (2.298-99). The metatextual concerns of the Second Sophistic are comparable to those of Ovid. In the *Imagines*, in particular, we have both the probable integration of material from different texts, as well as the continual shift between ekphrastic description and literary allusion. In the recent collection of essays, edited by Bowie and Elsner on the array of Philostratus’ work, Newby (2009, 322-23) describes the *Imagines* as ‘an example of a sophistic showpiece – a vehicle to reveal the author’s intellectual credentials, his detailed knowledge of Greek myth and literature and the ingenuity with which he can weave these into his account of a Neapolitan picture gallery. Yet through taking painting as its subject matter, *Imagines* also provides us with reflections and suggestions about the relationship between words and images and about the proper way in which to view art’.

⁵¹ Philostratus also includes a depiction of the Heliades in *Imagines* 1.11, which share a number of similarities with Ovid’s depiction of the Heliades, which also follows the story of Phaethon in the *Metamorphoses*.

Chapter 5: Constructing a Parallel Universe: Janus in the *Fasti*

1. INTRODUCTION

In chapter 3 we briefly discussed how Ovid's depiction of *chaos* in the *Fasti* follows more closely the Apollonian and Empedoclean models for universal creation, compared to the description of the primordial universe in the *Metamorphoses*. This chapter will further explore Ovid's depictions of the formation of the universe in the *Fasti* and in particular how this relates to the universe of the *Metamorphoses*. It will analyze further possible allusions to Empedocles in the Janus episode from *Fasti* 1, and how this emphasizes the notion of cyclical recurrence in the cosmos. It will also examine how the body of Janus illustrates the principle that the primordial universe was both anthropomorphic and spherical in form. It will draw out a number of further comparisons between the *Timaeus* and Cicero's *De Natura Deorum*, particularly in relation to Ovid's conception of the universe as a spherical living body. This will also demonstrate how in the *Fasti*, like in the *Metamorphoses*, Ovid integrates material from both Stoic and Epicurean philosophy.

This chapter will also analyze Ovid's illustration of the armillary sphere of Archimedes in *Fasti* 6 and how this is used as a further model with which to conceptualize the structure of the cosmos. It will examine how Ovid presents a series of different models for the structure of the universe in the *Fasti* and suggest that these are used to question the relationship between the text and the universe which it describes. Further comparisons will be made with Cicero's *De Natura Deorum*, and *Republic*, which also contain descriptions of Archimedes' armillary sphere. It will examine how Cicero uses the armillary sphere to argue for intelligent design in the universe, and as a means of relating the Stoic universe with that of the *Timaeus*. It will be argued that Ovid's inclusion of the armillary sphere in the *Fasti* may likewise be read as a means of problematizing different

philosophical conceptions of the world and its formation, as well as illustrating a number of further connections with Plato's *Timaeus*.

As this chapter will analyze how a number of passages from the *Metamorphoses* and the *Fasti* relate to each other, it is necessary to first set out a relative chronology for their composition.¹ It appears that Ovid was working on both texts concurrently in the decade leading to his exile in 8 AD.² While the *Metamorphoses* was in a relatively finished state at the time of his exile, the *Fasti* appears to be only partially complete. Green (2004, 18) divides the composition of the *Fasti* into three phases: phase 1, from AD 2-8, when Ovid started to produce the poem, with the intent of finishing it; phase 2, from AD 9-14, when Ovid continued and updated the work while in exile; and phase 3, from 14-17 AD, from the death of Augustus to Ovid's own death, when he revised the existing work to reflect the changing political situation in Rome. Green (2004, 22) concludes that 'irrespective of the date of composition, *all* parts of the poem have the potential to admit of an exilic reading'.

We have seen already in chapter 3 (§2.3) how Ovid alludes to his previous works, often by giving contrasting accounts of the same subject in different texts. If we accept the relative chronology between the *Fasti* and the *Metamorphoses* as outlined by Green (2004), Ovid's continued revision of the *Fasti* in exile places its composition after the *Metamorphoses*; however, it is clear that at least between 2 and 8 AD, Ovid was writing the *Metamorphoses* and *Fasti* concurrently. Hardie (1991, 52) in his discussion of the Janus episode in the *Fasti* states that 'the *Metamorphoses* and *Fasti*

¹ Establishing a relative chronology between the *Metamorphoses* and the *Fasti* is somewhat problematic and this is not helped by Ovid's literary ploy of portraying his works as unfinished, as we have seen above in the Introduction.

² In the *Tristia* (2.549-52), Ovid outlines the history of the composition of the *Fasti*, which he states was dedicated to Augustus, recently composed but interrupted by fate (presumably Ovid's exile). The poem as it appears to us now establishes Germanicus as the patron and literary inspiration of the *Fasti*. This would suggest that Ovid continued to revise the *Fasti* in exile, even following the composition of *Tristia* 2. Green (2004, 16) notes the different theories concerning the missing 6 books of the *Fasti*, which Ovid appears to refer to in the passage from the *Tristia*.

seem often to play off against each other'.³ Anderson (1997, 4) likewise states that the *Fasti* and *Metamorphoses* 'influence each other'. By comparing Ovid's description of the formation of the universe in both the *Metamorphoses* and the *Fasti*, this chapter will consider whether we can observe both texts alluding to each other. Ultimately it will argue that Ovid displays parallel universes in parallel texts. For clarity the argument presented here will generally assume a trajectory that places the *Fasti* at a later date than the *Metamorphoses*, but assumes a general intention on the part of Ovid to construct two poems in tandem, alluding to each other and without a sense of chronological sequence or hierarchy.

2. OVID'S CONTRASTING DEPICTIONS OF *CHAOS*

We have seen how Ovid portrays the primordial universe in the *Metamorphoses* as shifting in and out of personification, as Ovid continually alters between the modes of scientific and mythological discourse. In the *Fasti* he takes this further, as we encounter a fully personified *chaos* in the shape of Janus. Janus tells the narrator of his transformation into an anthropomorphic deity (*Fasti* 1.89-144). Janus calls himself a *res prisca* 'an ancient thing' and says that ancient people called him *chaos*: *me chaos antiqui ... vocabant* (1.103).⁴ Janus does not simply name himself as *chaos*, but rather articulates his account of his own formation, and so in turn that of the world, through reported speech.⁵ This immediately destabilizes our reading of the narrative, as we are left uncertain whether Janus was actually *chaos*, or whether people simply once identified him with *chaos*, and

³ Hardie (1991, 52) notes that the sequence of the Janus episode 'is also an outline in miniature of the plan of the *Metamorphoses*, *prima ... ab origine mundi ... ad mea tempora*' since both easily move from cosmological to Roman history (52). He also proposes an allusion at *Fasti* 1.287-88, where the *auctor* is told not to forsake his *opus*, to the sphragis of the *Metamorphoses*, which looks forward to the eternal life of the poem (53).

⁴ Hardie (1991, 59) notes a possible allusion to fragment two of Callimachus' *Aetia* in the shared word *chaos*. Hardie here also notes the Hesiodic allusion in the words which Janus addresses Ovid: *vates operose dierum*: Ovid is 'the bard who works on days'.

⁵ As stated in chapter 3 (§2.1) *chaos* will remain uncapitalized throughout.

whether the narrative he will recount is one which he remembers from personal experience, or is the one recalled by the ancients.⁶

As we have seen above, Janus describes how the four elements, air, fire, water and earth were at one time confounded together:

lucidus hic aer et quae tria corpora restant,
ignis, aquae, tellus, unus acervus erat.

Here the bright air and the three bodies which remain, fire, water, and earth were one mass (1.105-6).

Instead of the elemental opposites of hot/cold, wet/dry, soft/hard and heavy/light that we find mixed together in the *Metamorphoses* (1.19-20), in the *Fasti* it is the elements themselves, rather than their qualities, which are confounded together. Ovid uses the term *lucidus aer* when describing the element air. Green notes that the phrase *lucidus aer* first appears in Lucretius at *DRN* 4.340 in his discussion of optics (*insequitur candens confestim lucidus aer*). Given the rarity of this phrase, it is likely that Ovid appropriated it from the *DRN*. Ovid's use of the term *corpora* in this context may also be derived from the *DRN*, as it is one of the terms Lucretius frequently uses to denote atoms (*genitalia corpora* and *corpora prima*).⁷ Ovid's reapplication of *corpora* to denote elements rather than atoms may also be looking towards Cicero. In Cicero's translation of the *Timaeus*, he states that the soul is invisible *at ignis, anima, aqua, terra corpora sunt, eaque cernuntur* 'but fire, air, water, and earth are bodies and they can be distinguished' (51.17).⁸

⁶ Ovid may be referring to hieratical invocations of calling upon the gods using multiple names. Similarly in Plato's *Timaeus*, when Timaeus begins his account of the universe, he says that he will speak about ὁ οὐρανός 'the heavens', ἡ κόσμος 'or the world', or he whom we might call by any more suitable name (28b2-4).

⁷ On the different terms which Lucretius uses for atoms, see Sedley (1998, 38)

⁸ Green (2004, 77) points to this passage from the Cicero's translation of the *Timaeus* as well as *Tusculan Disputations* 1.40. Cic. *Ti.* 51.17 = Plato *Ti.* 46d6-7: τοῦτο δὲ ἀόρατον, πῦρ δὲ καὶ ὕδωρ καὶ γῆ καὶ ἀήρ σώματα πάντα ὄρατὰ γέγονεν ...

Constructing a Parallel Universe: Janus and the *Fasti*

In the *Fasti*, Janus continues to recall how the elements were then separated out from each other through their own discord, before being allocated their correct position in space:

ut semel haec rerum secessit lite suarum
inque novas abiit massa soluta domos,
flamma petit altum, propior locus aera cepit,
sederunt medio terra fretumque solo.

When once through the strife of its own parts this mass was loosened and separated and departed into new homes, fire sought the height, a nearer place seized air, and earth and sea settled in the middle region (1.107-110, tr. adapted Wiseman 2013)

The strife between the elements causes the primordial mass to be separated out into parts, before the elements move to their designated region in space. The general sequence of how the universe takes form is shared with that of the *Metamorphoses*, where the discordant mass of elements is separated out into its constituent parts and these are then bound in their correct position. There are, however, a number of key differences.

The elemental qualities in the primordial universe of the *Metamorphoses* are separated out by the *opifex rerum*, who subsequently binds them in place with harmonious peace (*concors pax*) (1.21-25). In the *Fasti*, however, *lis* ‘strife’ is the dividing catalyst. The elemental qualities in the *Metamorphoses* behave discordantly in primordial *chaos*; however, it is the *opifex rerum* who must resolve this conflict in order to impose order on the cosmos (*hanc deus et melior litem natura diremit*) (*Met.* 1.21). Not only does Ovid remove the *opifex rerum* from the universe of the *Fasti*, but the universe takes form through undirected processes, as the elemental warring results in the universe’s separation; in the *Metamorphoses* the elemental conflict first must be resolved before separation can occur. These subtle differences have a significant impact on how we interpret the universal mechanism in the *Fasti*. While *lis* ‘strife’ suggests Empedoclean *veĩkoç* and

discordia in the *Metamorphoses*, both *veĩkoç* and *discordia* can slip in and out of personification, while *lis* remains a strictly abstract force. We have examined the significance of the inclusion of the figure of the demiurge in the *Metamorphoses* in chapter 4 and the implications this has on our interpretation of the mechanism behind the universe's formation, namely it marks a shift away from the Lucretian physics with which the *Metamorphoses* begins.

The absence of the *opifex rerum* from the *Fasti* equally marks a potential return back to the anti-teleological universe of Lucretian physics. As we have seen in chapter 3, Lucretius describes the formation of the universe as follows: the universe begins in a storm of warring atomic particles; the conflict of these particles causes gaps to emerge between them and due to their varying shapes and forms they cannot stay joined together; the parts detach and like matter joins with like creating a differentiated universe; the earth particles being the heaviest occupy the centre and from pores in the earth, the sea, the heavenly bodies and the aether emerge (*DRN* 5.432-66).⁹ Not only is Ovid in the *Fasti* alluding to his account of *chaos* in the *Metamorphoses*, but by removing the figure of the demiurge from the sequence of universal formation, he alters his account so that it more directly follows the abstract sequence of events which can be seen in the *DRN*.

3. THE CYCLICAL UNIVERSE AND THE DIALOGIC TEXTS

3.1 *Janus as Cosmic Principle*

Janus' position at the very beginning of the universe and the calendar year, and indeed at the opening of the *Fasti* itself, may be read as emphasizing a fundamental cyclicity in the universe. At *Fasti* 1.65, Janus is introduced as follows: *Iane biceps, anni tacite labentis origo* 'Two-headed Janus, source of the quietly passing year'. The positioning of Janus at the beginning of the year implicitly refers to the concept of cyclical recurrence, as one year passes into another. Since Janus is both the origin of the year and the universe, this notion of recurring cycles may be projected onto the universe

⁹ These passages from the *DRN* are analysed in detail in chapter 3 (§§ 3.1, 3.2, 3.3).

as well. We have seen in chapter 4 how the world can undergo phases of destruction and regeneration through cataclysmic events such as floods and conflagrations; in the discourse of *Fasti* 1, Janus appears to control such events.

As *Fasti* 1 continues, Janus describes his role as universal gatekeeper, in charge of the cycling between phases of universal peace and strife:

quicquid ubique vides, caelum, mare, nubila, terras,
omnia sunt nostra clausa patentque manu.
me penes est unum vasti custodia mundi,
et ius vertendi cardinis omne meum est.
cum libuit Pacem placidis emittere tectis,
libera perpetuas ambulat illa vias:
sanguine letifero totus miscebitur orbis,
ni teneant rigidae condita bella serae.

Whatever you see anywhere, the sky, sea, clouds, earth, all things are closed or opened by my hand. In my hands alone is the guardianship of the vast universe, and the right to turn the hinge is entirely mine. When it pleases me to send forth Peace from tranquil halls, free she walks the continuous ways; in fatal blood the entire world will be confused, if the stern bars do not hold the enclosed wars (1.117-124, tr. adapted Wiseman 2013).

Janus controls the component elements of the universe, the sky, sea and earth. The image of him opening and closing all things suggests how the universe is initially formed through the separation of the elements, essentially an opening out; while periods of destruction see the elements brought back together, their divisions confounded as they are closed in upon each other. Janus' control of the *cardo* 'axis' or 'hinge' suggests both Janus' role as gatekeeper and the notion of cyclicity as Janus can turn the universe from one extreme to the other.

Both Hardie (1991, 50) and Garani (2013, 235) observe how the phases of peace and war which Janus oversees may be seen as an allusion to the Empedoclean cosmic principles of φιλότης and νεῖκος.¹⁰ Janus controls whether the world will be at peace and the divisions of the universe maintained, or whether war will be unleashed and the elements will be once more mixed and confounded. *Chaos* here is not merely the primordial phase of universal history resigned definitively to the past, but is a phase which can occur again in the future. If the wars are unleashed it is clear that the universe will return to the state of *chaos* with which it began. This, however, is different from Janus' initial claim to be *chaos*, as here instead he is the gatekeeper responsible for controlling the universal cycle.¹¹ This would appear to place Janus outside of the universal system. As Janus is the primary force dictating the cycling of the universe, he in effect replaces the forces of φιλότης and νεῖκος in Empedocles, emphasizing a further aspect of his double-nature. Janus thus effectively also replaces the *opifex rerum* of the *Metamorphoses* in his transformation from cosmos to cosmic force.

One of the defining features of the Empedoclean universe is that it is cyclical and undergoes two different creations and cosmogonies, one under the force of φιλότης and the other under the force of νεῖκος.¹² If Ovid is

¹⁰ Garani (2013, 235) states that: 'Janus' job is to guard the doors of peace and war, which are generally associated with the Empedoclean cosmic principles of Love and Strife'.

¹¹ Hardie (1991, 50) also makes the comparison between Janus and Aeolus in *Aeneid* 1. As we have seen there are strong Empedoclean echoes in this passage from the *Aeneid*. If Aeolus did not guard the winds and keep them barricaded then the result would be similar to *chaos*: *ni faciat, maria ac terras caelumque profundum / quippe ferant rapidi secum verrantque per auras* 'Otherwise, tearing they would carry off the sea, earth and sky and would sweep them away with blasts' (1.60-61). Zeus imprisons the Winds beneath a huge mountain which he calls as a *moles* (*Aen.* 1.61), one of the words which Ovid uses to describe *chaos* at *Met.* 1.7. Hardie (1991, 49) also compares Janus with the Homeric *Horai*, who guard the gates of Olympus.

¹² There is some debate as to the exact nature of the double cosmogony in Empedocles. Simplicius in his commentary on Aristotle's *Physics* (CIAG 9, 157.25-161.20 commenting on 187a21ff. = Inwood CTXT 19) discusses this double cosmic organization which he detects in Empedocles fr. 28/26: ἐν δὲ μέρει κρατέουσι περιπλομένοιο κύκλιοιο, καὶ φθίνει

choosing to deliberately set out two contrary accounts of creation, one in the *Metamorphoses* and the other in the *Fasti*, then it is possible that he is using his two separate accounts of creation to replicate the cyclical nature of the Empedoclean universe and the two different generations and cosmogonies which it contains. If we propose that Ovid encourages the reading of the beginnings of the *Metamorphoses* and the *Fasti* in parallel, not only does Ovid emphasize the fundamental mutability of the universe, by presenting contrasting accounts of generation between his two texts, but he seeks to replicate this universal mechanism by having the *Metamorphoses* and the *Fasti* allude to each other. In such a schema both accounts of the formation of the universe and the texts themselves would work in tandem.

The image of Janus as universal gatekeeper may also be drawing from *DRN* 5 where Lucretius also uses imagery of the opening and closing of the doors of death to depict the potential for the world to be destroyed.¹³ At *DRN* 5.351-79, Lucretius explains that while the universe is eternal, our world is susceptible to collisions and blows, and since the substance of the world is not purely solid but also mixed with void it may be destroyed, either through the penetration of particles arising from eternal space in a furious whirlwind, or through the collapse of the walls of our world into that eternal space. Finally he says:

haut igitur leti praeclusa est ianua caelo
nec soli terraeque neque altis aequoris undis,
sed patet immani et vasto respectat hiatu.

Therefore the doors of death are not closed for the sky, nor for the sun, nor the earth, nor for the high waves of the sea but stands open

εἰς ἄλληλα καὶ αὖξεται ἐν μέρει αἴσης. ‘And in turn they [the four elements] dominate as the cycle goes around, and they shrink into each other and turn[s assigned by destiny]’.

¹³ Complementary evidence may be seen in the double allusion identified by Garani (2013) to Empedocles and Lucretius in Ovid’s account of the Aristaeus story (*Fasti* 1.363-80) and his account of the Agonalia festival (*Fasti* 1.317-456).

and awaits with a vast gaping chasm (5.373-5, tr. adapted Gale 2009).

Lucretius describes how the component elements of the universe are in danger of being destroyed through the opening of the doors of death. There are a number of correspondences with the above passage from the *Fasti*; both Ovid and Lucretius describe how the elemental boundaries will be confounded if the doors are opened. Particularly striking is Lucretius' uses of the two terms: *ianua*, a 'door' or 'entrance' and *hiatus*, a 'gaping chasm' or 'yawning'; Janus adopts both these terms when explaining the double etymology of his name at the *Fasti* 1.103 and 1.280 (§3.2 below).¹⁴

The above suggests that the formation of the universe in the *Fasti* appears to favour the anti-teleological system of Lucretian physics; however Janus' description of his role as universal gatekeeper clearly places a divinity in charge of the universal mechanism. Janus thus presents a cosmogony which incorporates aspects from both the anti-teleological explanation of the universe, as derived from Lucretian physics and, as we shall see, the Stoic universe of divine design. As Green (2004, 76) states: 'for the most part, he [Janus] offers a philosophical interpretation of the world, in a manner which recalls Lucretius in particular... However, the irony is that this is all set within a (non-Lucretian) mythological framework: it is a *god* who is telling the story'. Ovid is not only blending different strains of philosophical discourse in the *Fasti*, but he is similarly merging and transforming mythological narrative and physics.

3.2 Double-Bodied and Double-Named Janus

Janus' name may also be read as mirroring his corporeal duplicity, as Janus gives two separate etymologies for the origin of his name. We have

¹⁴ Gale (2009, 136-37) notes how Vergil echoes 'the vivid metaphor of death as a yawning gateway' at *Aeneid* 6.127: *noctes atque dies patet atri ianua Ditis* 'night and day, the door of Death lies open'. Gale (2004, 137) also notes that the image of the yawning gates of death can be traced back to Homer (*Iliad* 5.646, 23.71; *Odyssey* 14.156 etc.). Ovid in turn appropriates *Aeneid* 6.127 in his depiction of the open doors of the house of *Fama* at 12.46 (Kelly 2014, 84).

seen in chapter 1 how aetiology and etymology are frequently combined throughout Ovid's works, as the origin of an individual and their name are often connected.¹⁵ This link between corporeal form and etymology can easily be seen in Ovid's depiction of Janus. After Janus appears at the opening of the *Fasti*, the narrator questions Janus about his shape, which he describes as *biformis* 'double-formed', and asks how he wishes to be addressed. Janus provides two different explanations for his name and physical form. As Green (2004, 74) states his first is a historical explanation. Janus states that he used to be *chaos*, from which his name is derived: *me chaos antiqui ... vocabant* 'the ancients called me *chaos*' (1.103), with his double form being a 'reminder' of his earlier chaotic state (113-14).¹⁶ Janus suggests that the first etymology of his name is from *hiare* 'to gape' or 'open wide', which as Hardie (1991, 49) states is calqued on the Greek etymology for *χάος* from the verb *χάσκειν* 'to yawn' or 'gape'.¹⁷ In tracing the etymological origin for his name, Janus likewise traces the origin of his physical form.

Janus then provides a second explanation for his form and name. He points to his current role as universal gatekeeper (125), stating *inde vocor Ianus* 'therefore I am called Janus' (127), referring to the *ianua* 'entrance' over which he presides. His double form allows him to occupy both sides of

¹⁵ Keith (1991, 73) states in relation to Ovid's use of etymological wordplay that 'recent scholarly attention to Ovidian etymologising has shown that his sophisticated etymologies do not merely reflect the abstruse erudition of a Hellenistic poet, but enhances the meaning of their narrative context'. Michalopoulos (2001) provides a useful and comprehensive study of etymology in Ovid. Dickey (2007, 91-92) discusses the survival of Hellenistic etymologies in later collections.

¹⁶ This Alexandrian footnote likely cloaks an allusion to a specific text. In chapter 3 (§2.2) we observed how by simply placing *chaos* at the beginning of his cosmogony in the *Metamorphoses* Ovid is very deliberately activating an allusion to the *χάος* of Hesiod's *Theogony* (116). The first etymology which Janus suggests for his name *hiare* 'to gape' could also suggest the space which opens up for creation to occur in Hesiod's cosmogony: ἦτοι μὲν πρότιστα Χάος γέενετ' (116, ed. West 1966), which West (1988) translates: 'first came the Chasm'.

¹⁷ Green (2004, 75) notes that 'this extravagant etymology may have been an Ovidian innovation or else it was suggested by his contemporary Verrius Flaccus'.

the threshold, simultaneously facing east and west (134-39). Green (2004, 82) shows how this second etymology can be seen in Cicero's *DND* (2.67.8-10): *quod ab eundo nomen est ductum, ex quo transitiones perviae ianiforesque in liminibus profanarum aedium ianuae nominantur* 'for his name is derived from the verb *eundum*, "going", and *iani* is the name given to a passageway which may be crossed, and *ianuae* to the doors at the entrances of houses' (tr. adapted Walsh 1998).¹⁸ Ovid's depiction of Janus in the *Fasti* shows a clear relationship between linguistic and corporeal form as Janus's double body is mirrored by his double etymology; the two different causes for his bodily shape are the result of the two separate derivations for his name. Etymology then marks another site where we can see Ovid constructing a parallel between linguistic and material form.

4. ANTHROPOMORPHIC *CHAOS* AND ARCHIMEDES' ARMILLARY SPHERE

4.1 *Janus' Spherical Body and Cicero's globus*

After stating that the ancients used to call him *chaos*, Janus describes his transformation, as the primordial universe gains shape in the guise of an anthropomorphic deity. By giving *chaos* a living, breathing, speaking body in the *Fasti*, Ovid directly aligns corporeal formation with the creation of the cosmos. This contrasts with the *chaos* of the *Metamorphoses*, which remains a purely abstract physical state. Janus describes the process of his transformation from *chaos* as follows:

tunc ego, qui fueram globus et sine imagine moles,
in faciem redii dignaque membra deo.
nunc quoque, confusae quondam nota parva figurae,
ante quod est in me postque videtur idem.

¹⁸ Green (2004, 82) also notes a further derivation for *Ianus* in the *Fasti* from *ire* 'to go'; the verb appears at 226; however, as Jupiter does the going it is unlikely that this is intended to be read.

At that time I, who had been a sphere, a mass without form, returned into the face and limbs worthy of a god. And even now a small sign of my formerly mixed up form, what is in front and behind in me look just the same (1.111-14, tr. adapted Wiseman 2013).

Janus recalls how he once was a *globus*, a ‘sphere’ and a *moles*, a ‘shapeless mass’, without appearance or form. *moles* is the same word which Ovid uses to describe *chaos* at *Met* 1.7. Janus then describes how he subsequently gained a face and limbs. Here Janus illustrates his transformation from a purely abstract physical state into an anthropomorphic deity. Not only does this show the slipperiness between mythological personification and scientific abstraction, but, given that Janus is identified with the universe itself, cosmogony can be pictured in terms of the development of corporeal form.

It seems unusual for Janus to state that he ‘returned’ into the face and limbs of a god if he had not been an embodied god at some stage before his transformation from *chaos*. The verb *redeo* may implicitly refer to the notion of universal cyclicity. Green (2004, 78) observes that scholars tend to translate *redeo* as if the prefix were redundant. Green shows, however, that this works against the standard use of the verb by Ovid, pointing in particular to the description of Proteus reverting to his former form at *Fasti* 1.374 (*in sua membra redit*). If Janus is likewise returning to an anthropomorphic state, this suggests that the universe existed before *chaos*. This could be interpreted as indicating the cyclical regeneration and destruction of the world in terms of the gaining and loss of anthropomorphic form.¹⁹

The representation of the creation of the universe as the gaining of corporeal form aligns Janus with depictions which portray the universe as a living body. In the *Timaeus* the world is likewise described as a ζῶον, a

¹⁹ As we have seen in chapter 3 (§2.4), Lucan in the *Pharsalia* (1.72-80) compares the collapse of Rome to the universe collapsing and reverting back into primeval *chaos*: *antiquum repetens iterum chaos*.

‘living creature’ (30c3), which the δημιουργός fashions into the shape of a sphere. He made it σφαιροειδές ‘spherical’ because:

τῷ δὲ τὰ πάντα ἐν αὐτῷ ζῶα περιέχειν μέλλοντι ζῴῳ πρέπον ἂν εἴη
σχῆμα τὸ περιειληφὸς ἐν αὐτῷ πάντα ὅποσα σχήματα:

For the living creature that was going to encompass within itself all living creatures, the fitting form was the one that could encompass every other form in itself (33b2-4).²⁰

The world in the *Timaeus* is seen as living body, and since it will enclose all things in itself, its optimum shape is a sphere. Timaeus continues to state how the sphere must be equidistant at all points from its middle and how only a sphere can represent the world, as it alone signifies complete geometric perfection. He uses imagery from a lathe to describe how the demiurge turned it into shape (κυκλωτερὲς αὐτὸ ἐτορνεύσατο) (33b5). Janus is also an example of a universe fully realized as a living body and whose earlier form as a *globus* ‘sphere’ shares this same characteristic with the world of the *Timaeus*.

In his translation of the *Timaeus* (17), Cicero translates σφαιροειδές as *globosum*, the adjective derived from *globus*. Sedley (2013, 190-91) shows that in Cicero’s translation of the *Timaeus*, the narrator feels the need

²⁰ Timaeus continues to describe how it has no external limbs or orifices, so that it is complete and contained within itself, even feeding on its own waste so that there is no need for nourishment from an external source. Cornford (1935, 55) makes comparison with Xenophanes of Colophon who also had a spherical world without specific sense organs: οὔλος ὄρα, οὔλος δὲ νοεῖ, οὔλος δὲ τ’ ἀκούει ‘the whole [of him] sees, the whole thinks, and the whole hears’ (fr. 24). KRS (160-70) note: ‘It was probably because of its motionless unity that Xenophanes’ god was identified with Parmenides’ Being, and later absorbed some of its properties. As early as Timon of Phlius it is called “equal in every way” and so becomes credited with spherical shape’. Cornford also compares a description of the body of Zeus as the cosmos in the Orphic fragments (Bernabe 243F = Kern fr. 168). The sky is his head, the stars his hair, the sun and moon his eyes, the air his *nous*, by which he hears and sees all things. West (1983, 230-40) discussing the provenance of this passage, as well as comparisons in earlier literature, labels it ‘some Hellenistic syncretism’.

‘to gloss or amplify his rendition of σφαιροειδής by *globosum*’.²¹ This is due to the imperfect match between the two terms, as *globus* might equally be taken to refer to an amorphous round mass or lump.²² Sedley shows how the usual geometric term for ‘sphere’ was *sphaera* and states that Cicero was understandably reluctant to use this Greek-derived term when ‘forging a Latin vocabulary’.²³ How then are we to interpret Ovid’s use of the term *globus* in the *Fasti*, when applied to the body of Janus? If we consider that Janus is referring to the perfect geometrical sphere, this brings us significantly closer to establishing a connection between the description of Janus’ body and the spherical living world of the *Timaeus*, particularly when placed alongside Cicero’s nuanced use of the term *globosum*; however, a reading of *globus* as designating a loosely round lump would be more fitting with the other term which Janus uses when describing his primordial body, namely *moles*, ‘a shapeless mass’ (*Fasti* 1.111).

4.2 Archimedes’ Armillary Sphere

The strongest case for a reading of *globus* in the *Fasti* as referring to a perfectly round sphere comes later in the text, where it is used when describing the armillary sphere of Archimedes. A technical discussion of the realities of the armillary sphere will be attempted in §4.5; the present section will begin with its literary manifestations, examining how Ovid’s depiction of the armillary sphere may be read as presenting a further model with which to view the structure and mechanism of the cosmos. In *Fasti* 6, Ovid identifies the goddess Vesta with *terra* and gives a description of her temple, which he likens to the round world (6.261-66). Following this he gives an illustration of the cosmos, describing how the spherical earth can remain suspended in mid air through its rotation and is positioned at the

²¹ Cicero adds the following sentence to his word for word translation of the *Timaeus*: *nihil asperitatis ut haberet, nihil offensionis, nihil incisum angulis, nihil anfractibus, nihil eminens, nihil lacunosum* (17), which Sedley (2013, 190) translates as: ‘... so that it should have no roughness, no resistance, no sharp corners, nothing crooked, nothing protruding, no gaps’.

²² Ovid uses *globus* when describing large drops of blood at *Met.* 12.238.

²³ Glucker (2012) provides a useful list and analysis of the many different Greek philosophical terms translated by Cicero.

centre of the cosmos. He then compares this conceptualization of the world to the armillary sphere of Archimedes and its miniature model of the cosmos:

terra pilae similis, nullo fulcimine nixa,
aere subiecto tam grave pendet onus:
ipsa volubilitas libratum sustinet orbem,
quique premat partes angulus omnis abest:
cumque sit in media rerum regione locata,
et tangat nullum plusve minusve latus,
ni convexa foret, parti vicinior esset,
nec medium terram mundus haberet onus.
arte Syracosia suspensus in aere clauso
stat globus, immensi parva figura poli,
et quantum a summis, tantum secessit ab imis
terra; quod ut fiat forma rotunda facit.

Earth, like a ball, resting on no support, is suspended despite its heavy weight with air beneath it. Its rotation keeps the sphere balanced, and, since it presses in on all parts it has no corner; it is positioned at the centre of everything, so that it touches no side more, or less; if it were not vaulted it would be closer to one part, and the universe would not have Earth as its central weight. By Syracusan skill a globe is poised, suspended with air enclosed within, a tiny image of the boundless heavens, and the earth is as far distant from the top as from the bottom. Its rounded shape causes this to happen (6.269-80, tr. adapted Wiseman 2013).

This extended ekphrasis shows Ovid using the armillary sphere to present a model of the universe. He begins by describing the universe itself with the earth at its centre, comparing the earth to a round ball (*pila*) perfectly suspended in space with no support and undergoing continuous rotation. Its rotation accounts for its ability to remain perpetually centred in the universe.

The passage easily shifts from the description of the universe to an illustration of the armillary sphere of Archimedes, where the model cosmos likewise has the earth at its centre, apparently suspended in enclosed air. Much of the imagery recalls that of the *Timaeus* and the rounded sphere of the world perfectly smooth and equidistant at every point from its centre (33b).

Littlewood (2006, 91) states that ‘the concept of the earth rotating at the heart of a geocentric universe, maintained in equipoise by centripetal force, was an essential tenet of Stoic theology’. Ovid may well be drawing from the *De Natura Deorum*, where Balbus describes the geometric perfection of the sphere and why its shape is best suited to the form of the earth and the universe. He states that there are two shapes which are greater than all the others: *ex solidis globus (sic enim σφαῖραν interpretari placet) ex planis autem circulus aut orbis, qui κύκλος Graece dicitur* ‘in solid bodies, the globe (*globus* is the word I use to render Greek *sphaera*), and in planes the circle or orb, the Greek word for which is *kuklos*’ (2.47.14-16, tr. Walsh 1997). It is clear that Balbus repeats much of this material from Cicero’s own translation of the *Timaeus* (17-18 above); Balbus similarly maps *globus* onto σφαῖρα.²⁴ In both the translation of the *Timaeus* and the *DND*, the sphere is said to be without any sharp corners (*nihil incisum angulis*).²⁵ Ovid likewise describes the sphere of the earth as *angulus omnis abest* in his depiction of the armillary sphere (*Fasti* 6.272). Balbus also talks of the rotary movement (*volubilitas*) of the cosmos a little later at *DND* 2.49.9; this is the same term which Ovid uses for the spinning earth at *Fasti*

²⁴ Balbus also repeats almost word for word the description of the sphere in the *Timaeus*. Compare *DND* 2.47.11-12: *nihil asperitatis habere nihil offensionis potest, nihil incisum angulis nihil anfractibus, nihil eminens nihil lacunosum* with *Timaeus* 17: *nihil asperitatis ut haberet, nihil offensionis, nihil incisum angulis, nihil anfractibus, nihil eminens, nihil lacunosum*.

²⁵ Gee (2009, 102-103) draws upon the same set of comparisons to likewise compare the accounts of the universe in the *Fasti* and the *DND*.

6.271.²⁶ Given that Cicero and Ovid are essentially using the same vocabulary in a very similar context and that both display a nuanced use of the term *globus* to describe a perfect sphere, it is likely that Ovid is either alluding to Cicero's translation of the *Timaeus* at this point or Balbus' Stoic adaptation of it.

Most relevant to our current concerns is that the term which Ovid uses for the armillary sphere of Archimedes is *globus*, indicating that in the same text in a similar context, namely the conceptualization of astronomical processes, *globus* is plainly taken to refer to a perfect sphere. When this is coupled with the likelihood that Ovid is appropriating Cicero's nuanced use of the term *globus* (either from the *DND* or the *Timaeus*), then *globus* should equally be taken to mean a perfectly round sphere, when describing the body of Janus. If we follow this interpretation, Janus's spherical body as well as him being a corporeal realization of the world as a living creature suggests that Ovid is alluding to the perfectly round ζῳον that is the cosmos of the *Timaeus*.

4.3 Divine Craftsmanship

The *DND* may not only shed light on the type of cosmos which Ovid envisages in *Fasti* 6, but it may also provide a potential source for the identification of this type of cosmos with the armillary sphere of Archimedes, as well as the use of the armillary sphere as a means by which to interrogate the philosophical underpinning of the cosmos. Balbus in the *DND* (2.88) also recalls an armillary sphere which he states was recently fashioned by Posidonius, but which he later identifies with the armillary sphere of Archimedes. He states that each time it revolved it made the sun, moon, and planets reproduce the movements which they make over a day and a night. Balbus uses the armillary sphere to argue against the Epicurean belief that the world was formed through chance and necessity.

²⁶ At *DND* 2.46, Balbus also states how the Epicureans crack jokes at the idea of a spherical living world as they cannot envisage what a 'whirling, tubby god' is like (*volubilis et rotundus deus*).

...et Archimedes arbitrantur plus valuisse in imitandis sphaerae conversionibus quam naturam in efficiendis; praesertim cum multis partibus sint illa perfecta quam haec simulata sollertius.

And they [the Epicureans] believe that Archimedes was more successful in his working model of the heavenly revolutions than nature who achieved them, especially since nature's role is considerably more ingenious than are such representations (2.88.10-89.1, tr. adapted Walsh 1997).²⁷

The craftsman of the armillary sphere is clearly likened to the demiurge and Balbus expresses disbelief as to how the Epicureans can accept that Archimedes could fashion such a device, while the more complex mechanism of the cosmos must be governed by undirected forces. We have seen how Ovid deliberately shifts between the anti-teleological universe of Lucretian physics and the Stoic universe of divine design in both the beginning of the *Metamorphoses* and the *Fasti*. Ovid's inclusion of the armillary sphere in the *Fasti* may also be read as drawing upon this debate. On the one hand Ovid uses the armillary sphere to illustrate how the earth remains at the centre of the cosmos through its continual rotation. This clearly suggests an undirected cosmic process. The general comparison of the cosmos to an armillary sphere, however, implies the notion of design as well as a controlling hand operating the device, which causes the movement of the celestial bodies.

Plato also appears to refer to an armillary sphere in the *Timaeus* (40c-d), where he states that the movements of the heavenly bodies are too complicated for description. In particular he refers to the difficulty of tracking the counter-revolutions of their orbits relative to each other. He concludes by stating that it is essentially a pointless task to attempt to describe such movements without having a model upon which they may be

²⁷ All displayed quotations from books 2 and 3 of *De Natura Deorum* follow Pease's 1958 HUP edition, while quotations from book 1 follow Dyck's 2003 Cambridge commentary of book 1.

viewed: τὸ λέγειν ἄνευ δι' ὄψεως τούτων αὖ τῶν μιμημάτων μάταιος ἂν εἴη πόνος: 'to describe all this without visible models of these same would be labour spent in vain' (40d2-3, tr. Cornford 1935). Cornford (1935, 135) states that an armillary sphere 'would be needed to illustrate all the complications that result, in particular, from the changes in the relative positions of the planets, due to their composite motions and different speeds'.

Cicero also observes a connection between how Plato organizes the cosmos in the *Timaeus* and the armillary sphere of Archimedes. In the *Tusculan Disputations* he compares Archimedes to the demiurge of the *Timaeus*:

nam cum Archimedes lunae solis quinque errantium motus in sphaeram illigavit, effecit idem quod ille, qui in Timaeo mundum aedificavit Platonis deus, ut tarditate et celeritate dissimillimos motus una regeret conversio.

For when Archimedes attached to a globe the movements of the moon, sun and the five wanderers, he did the same as the god who created the world in Plato's *Timaeus*: a single revolution controlled movements totally unlike in slowness and swiftness (1.63.1-5, ed. and tr. Douglas 1985).

Cicero directly compares Archimedes' armillary sphere with the structure of the cosmos as set out in the *Timaeus*. He once more draws attention to the diverse movements of the celestial bodies and identifies the demiurge with Archimedes, as both are seen to fashion a functioning cosmos. Cicero, following the same line of argument which he has Balbus make in the *DND*, uses the armillary sphere to argue that the world must be divinely created otherwise Archimedes could not have copied those motions on a sphere without divine inspiration (*sine divino ingenio*) (1.63.7). Cicero's identification of the sphere of Archimedes with Plato's cosmos increases the

probability that Ovid also uses the armillary sphere in *Fasti* 6 to allude to the *Timaeus*.

4.4 Cosmic Craftsmanship in Aratus and Apollonius

Aratus, similar to Cicero, uses a craftsman simile when discussing the composition of his cosmos, which may also implicitly refer to the image of an armillary sphere. In the *Republic* (1.21-2), Cicero describes a celestial globe which he attributes to Thales of Miletus and which he says was later marked by Eudoxus of Cnidus with the constellations. Cicero also states that Aratus despite his lack of astronomical knowledge composed a poem based on this sphere. Cicero's statement that Aratus set out in verse the cosmic arrangement of Eudoxus with little understanding of the astronomy which he was describing reflects a general sentiment, stretching back to Hipparchus, which arguably overemphasised Aratus' dependence on Eudoxus' *Phaenomena* and *Enoptron* in his own *Phaenomena*.²⁸ Aratus appears to compare the cosmos to an armillary sphere when describing the four celestial circles, the tropics, the equator and the ecliptic. He compares these circles to revolving wheels fashioned together into a shape of a sphere by a divine creator:

Οὐ κεν Ἀθηναίης χειρῶν δεδιδαγμένος ἀνὴρ
ἄλλη κολλήσαιο κυλινδόμενα τροχάλεια
τοῖά τε καὶ τόσα, πάντα περὶ σφαιρηδὸν ἐλίσσω,
ὥς τὰ γ' ἐναιθέρια πλαγίῳ συναρηρότα κύκλῳ
ἐξ ἠοῦς ἐπὶ νύκτα διώκεται ἥματα πάντα.

In no other way would a man trained in the craftsmanship of Athene weld together revolving wheels in such a pattern and of such a size, rounding off the whole like a sphere, than the system of celestial circles, which, united by the oblique circle, speed from dawn to nightfall all the time (529-33, ed. and tr. Kidd 1997)

²⁸ Kidd (1997, 14-18) gives a good summary of the nature of Eudoxus' influence on Aratus.

The image of these wheels being welded together by ‘a man trained in the craftsmanship of Athene’ appears to refer to a model of the cosmos which Aratus has just described. Gee (2009, 89) states in relation to this passage that ‘we look down on [the celestial circles] synoptically, as on a spherical model and find that they are linked not otherwise than a skilled artisan would have joined them’.

It is possible that Aratus’ craftsman simile could have also influenced Ovid’s depiction of the armillary sphere in the *Fasti*. Ovid refers to Aratus by name in the *Amores* (1.15.16) where he places Aratus alongside the stars and the moon, saying that he will likewise live forever. Gee (2009, 193-204) also discusses a number of allusions in the *Fasti* to Aratus’ *Phaenomena*. Ovid is also credited with translating the *Phaenomena*, two fragments of which survive (Courtney 2003 fr. 1 and 2).²⁹



Figure 3: Armillary Sphere floor mosaic, from the House of Leda (2nd CBC), Solunto (Palermo)

To what phase in Ovid’s career this translation belongs remains a debated issue (Gee 2009, 68-69); however, it appears that Aratus exerted a significant influence on Ovid and the *Fasti* in particular, and that Ovid would have had precise knowledge of the

celestial movements described in Aratus’ poem. Given the cosmic contexts of both poems and that Cicero refers to Aratus when he mentions the

²⁹ The importance of Aratus’ influence on Latin literature can also be seen in Cicero’s own translation of the *Phaenomena*. Kidd (1997, 42) discusses the influence of Aratus on Latin literature, pointing in particular to Vergil’s Aratean material on weather signs in the *Georgics* (1.351-460).

armillary sphere in the *Republic*, Aratus' *Phaenomena* may also be proposed as a further possible intertext for Ovid's organisation of the cosmos in *Fasti* 6. This passage from the *Phaenomena* provides us with another example which appears to use an armillary sphere to project an image of a divine craftsman controlling the mechanism of the cosmos.

Another intertext which should be briefly considered is the passage which describes the toy-sphere with which Aphrodite bribes her spoiled son Eros in Apollonius Rhodius' *Argonautica*. This toy-sphere is revealed to be more than merely a child's plaything. Apollonius refers to this ball as a 'well-rounded sphere' (σφαῖρα ἐντρόχαλος) and describes a number of rings which revolve around it:

χρύσεια μὲν οἱ κύκλα τετεύχεται, ἀμφὶ δ' ἑκάστω
διπλόαι ἀψῖδες περιηγέες εἰλίσσονται:
κρυπταὶ δὲ ῥαφαί εἰσιν, ἔλιξ δ' ἐπιδέδρομε πάσαις
κυανέη.

Golden circles have been made, and around each one double loops twist round in a circle. But the stitches are hidden and a blue spiral is in a state of running around all of them (3.137-40, tr. adapted Hunter 1993)

It appears that Apollonius is describing a form of celestial model, a perfectly round sphere with spiral rings running around it. This appears to be confirmed by a number of allusions in this passage to Aratus' *Phaenomena* and specifically the craftsman simile displayed above. The handiwork of Hephaestus (χειρῶν Ἡφαίστοιο) in the *Argonautica* can be compared with that of *Athena* (Ἀθηναίης χειρῶν) in the *Phaenomena* (529). Apollonius refers to the sphere as well-rounded (ἐντρόχαλον), which also appears to be an allusion to Aratus's description of Athena welding the revolving circular rings (τροχάλεια).³⁰ That the sphere is the toy of Eros has also been

³⁰ For a full discussion of this passage see Pendergraft (1991), who also identifies these allusions to Aratus, stating that 'Apollonius takes pains to recall the *Phaenomena* passage

suggested to refer to the Empedoclean cosmic force of φιλότης, who after all is responsible for drawing the universe together into a perfectly round sphere.³¹ The image from the *Argonautica* of Eros as a petulant child bribed by Athena with this toy-sphere could suggest that to the gods the cosmos is merely a toy, just like an armillary sphere is for us. Apollonius uses the toy-sphere to integrate a complex scientific image of the universe into his mythological narrative. As Kyriakou (1994, 316) states Apollonius ‘turns a highly abstract philosophical concept and image into a Hellenistic playful piece of miniature ekphrasis’. This dynamic is comparable to the switching between mythological and scientific discourse which we have observed occurring throughout Ovid’s different cosmogonies in the *Metamorphoses* and *Fasti*.

4.5 The Armillary Sphere: Models and Reconstructions

It is also worth questioning to what extent the passage from *Fasti* 6 is describing an actual armillary sphere and to what degree it is simply drawing from Plato, Aratus and Cicero. This section will provide a brief summary of the potential cosmic models which Ovid could have encountered, before looking at a number of contemporary reconstructions of the armillary sphere of Archimedes. An armillary sphere is a model of the heavenly bodies, consisting of a spherical framework of rings placed in orbit around the earth or sun. One of the earliest surviving depictions of an armillary sphere was excavated in the House of Leda near Palermo (*Figure*

through verbal echoes’ (97). Kidd (1997, 368) notes that τροχάλεια only appears at *Phaenomena* 530 and states that ‘they are rings or circular bands, not (as LSJ) a globe or sphere though they could be thought of as composing an armillary sphere’.

³¹ Kyriakou (1994, 316) states that in Apollonius’ description of the toy-sphere there are a number of ‘important verbal similarities which point directly to the Empedoclean σφαῖρος’. Kyriakou points to Empedocles’ description of the spherical universe (fr. Inwood 34.4 / DK 28): σφαῖρος κυκλοτερῆς μονίηι περιηγεί γαίωv. Apollonius also uses the adjective περιηγῆς at *Arg.* 3.138 (above). Kyriakou states that the use of the adjective περιηγῆς before the Hellenistic period only appears in Empedocles. For a discussion of this fragment of Empedocles, see §5.1 (below).

3).³² The Armillary sphere should not be confused with a celestial globe, which was a sphere on which the constellations were depicted, or an orrery, a device used to calculate the relative positions of the heavenly bodies at different times.

Cicero states that the armillary sphere of Archimedes is said to have been brought to Rome by M. Claudius Marcellus, after his conquest of Syracuse in 212 BC (Cicero *Republic* 1.21). Cicero distinguishes two types of model globes, one which was solid (a celestial globe) and the other hollow (presumably an armillary sphere).³³ The more complex hollow globe was made of moving parts and could replicate the complex revolutions of the heavenly bodies (Littlewood 2006, 92 and Gee 2009, 97). In the *Republic* (1.21-2) Cicero attributes the crude solid version of the sphere to Thales of Miletus, which he says was later marked by Eudoxus of Cnidus with the constellations.³⁴ Cicero then contrasts this with the complex hollow armillary sphere of Archimedes.³⁵ Cicero says that the hollow version was so accurate that by a single device for turning, the globe could reproduce the different divergent movements of the five ‘wandering’ stars, as well as the rotation of the moon and sun, which could replicate the same eclipses which were observable in reality.³⁶

³² Di Pasquale (2016, 49-63) discusses this mosaic from the House of Leda, and a number of visual depictions of celestial globes. He also compares the rotating dining room of Nero’s *Domus Aurea* and the Pantheon to functioning armillary spheres.

³³ The Farnese Atlas, a 2nd century Roman marble copy of a Hellenistic sculpture, holds on his shoulders a celestial sphere with the constellation roughly depicted.

³⁴ Diogenes Laertius (2.1-2) states that Anaximander, along with a number of other inventions, constructed a sphere (σφαῖραν). Kahn (1960, 89) identifies this with the solid sphere described by Cicero.

³⁵ Epicurus (*On Nature* book 11) appears to show that the complex type of armillary sphere described by Cicero existed before Archimedes. Epicurus criticises the use of such devices on the basis that no picture of the universe can be accurate given the relative positions from which we observe the movement of the heavenly bodies. Sedley (1976, 31-43) provides a text, translation and commentary on this section of *On Nature*.

³⁶ Cicero (*Republic* 1.22.16-24): *atque in eo admirandum esse inventum Archimedi, quod excogitasset, quem ad modum in dissimillimis motibus inaequabiles et varios cursus servaret una conversio. Hanc sphaeram Gallus cum moveret, fiebat, ut soli luna totidem*

As both Gee (2009, 99) and Littlewood (2006, 92) state, the armillary sphere which Ovid describes in the *Fasti* must correspond to the more complex hollow type within which would be visible the movement of the celestial bodies. A number of attempts have recently been made to



Figure 4: Reconstruction of Archimedes' Armillary Sphere by Michael Wright

(Figure 4).³⁷ Wright's model consists of a large sphere upon which are engraved the different constellations. Within the sphere, 24 gear wheels drive curved pointers around its circumference; these curved pointers represent the different celestial bodies; those representing the sun and moon move at a constant speed, while those representing the wandering planets move back and forth with respect to the fixed stars, thus replicating the various movements of the different planets, while also allowing for the

conversionibus in aere illo, quot diebus in ipso caelo, succederet, ex quo et in [caelo] sphaera solis fieret eadem illa defectio et incideret luna tum in eam metam, quae esset umbra terrae, cum sol e regione ... 'The discovery of Archimedes was all the more remarkable, because he had discovered how a single turning action could preserve these unequal orbits with their different speeds. When Galus moved this globe, the moon followed the sun by as many revolutions of the bronze globe as it does by days in the sky itself; the result was that the same eclipse of the sun occurred on the globe, and the moon then fell into the space which was in the shadow of the earth, when the sun from the region ... [text breaks off]' (tr. Zetzel 1999).

³⁷ Marchant (2015) writing for *Nature* (news) discusses Wright's recent reconstruction which will be displayed in the Basel Museum of Ancient Art and Ludwig Collection in Switzerland as part of an exhibition of artefacts from the Antikythera shipwreck.

pointers to indicate solar and lunar eclipses as described by Cicero. This is all achieved through the rotation of a single knob at the top of the sphere.³⁸

In an unpublished article on the device, Wright evaluates the different literary sources for Archimedes' armillary sphere.³⁹ He largely dismisses Ovid's account of the sphere as based on 'hearsay'. Wright's model is not so much an armillary sphere but represents how the different celestial bodies move in relation to the fixed stars. He essentially takes a celestial globe (the solid sphere described by Cicero) and attaches to it a series of pointers which trace these movements upon the constellations which are

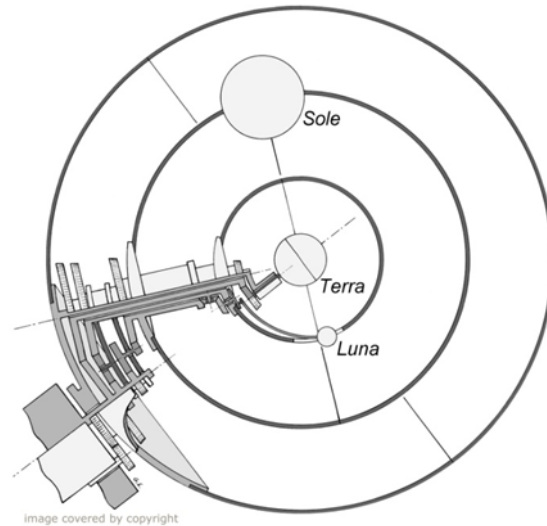


Figure 5: Proposed Illustration of the Armillary Sphere of Archimedes from the Museo Galileo

incised on the surface of the sphere, thus making it function as an orrery. Ovid, however, uses the armillary sphere to picture the cosmos from an exterior perspective, with the earth visible at its central point. Cicero in the passage from the *Republic* describing the more complex sphere does not elaborate on what the celestial bodies rotate around; however elsewhere in Cicero's work there is no doubt that he imagines the earth to be at the centre

³⁸ The discovery of section of a gear wheel in Olbia in Sicily in 2006 has prompted speculation that the gear belonged to Archimedes' armillary sphere or a very similar device. While the attribution of the gear to an armillary sphere is speculative, the complexity of the gear is astounding. The gear has been dated from the end of the third to the middle of the second century BC (Toscano 2012); particular attention has been given to the complex curved shape of the gear's teeth which previously had been considered a relatively modern invention (ca. 1700). Toscano (2012) states: 'besides [the gear's] very refined engineering workmanship, it is made of a brass alloy, a characteristic which had never been found so far in other metal artifacts with the same dating'.

³⁹ A draft of this article is available at the Histoire Science website (hist.science.online.fr).

of the cosmos and this is the dominant view throughout the philosophical tradition.⁴⁰ And given that he does not mention that this is different in the Armillary sphere, this could suggest that the second illustration from the Museo Galileo is more accurate despite its lack of the five ‘wandering’ planets (*Figure 5*). Ovid’s view of a spherical earth at the midpoint of a spherical world is, however, shared by Archimedes, who gives the following description of the cosmos in his extended calculation of how many grains of sand it would require to fill the universe:

Κατέχεις δὲ διότι καλεῖται κόσμος ὑπὸ μὲν τῶν πλείστων
ἀστρολόγων ἅ σφαῖρα, ἃς ἐστὶ κέντρον μὲν τὸ τᾶς γᾶς κέντρον, ἃ δὲ
ἐκ τοῦ κέντρου ἴσα τᾶ εὐθεία τᾶ μεταξὺ τοῦ κέντρου τοῦ ἀλίου καὶ
τοῦ κέντρου τᾶς γᾶς.⁴¹

You consider that because cosmos is the name given by most astronomers to the sphere whose centre is the centre of the earth and whose radius is equal to the distance between the centre of the sun and the earth (*The Sand Reckoner* tr. adapted Dijksterhuis 1987).⁴²

Archimedes is also known to have written a treatise *On Sphere-Making*, which Pappus of Alexandria (290-350 AD) states was already presumed lost at his time (*Mathematical Collection* 8.2, 3).

Cicero recalls in the *Republic* at 1.22 that the armillary sphere was made of bronze (*in aere illo*); he is presumably referring to the interconnected series of rings which would have represented the different celestial bodies. Ovid describes the armillary sphere as enclosing air within it (*in aëre clauso*).⁴³ As Gee (2009, 97) notes, this is often read as Ovid mistaking Cicero’s phrase *in aere illo* and has been used to argue that Ovid

⁴⁰ The Pythagorean belief of the fire at the centre of the universe is discussed in the excursus.

⁴¹ Text from Gee (2009 99).

⁴² Gee (2009, 99) also compares this passage to Ovid’s description of the armillary sphere in *Fasti* 6.

⁴³ Gee also points to Propertius (4.1.76) who describes a ‘bronze planetarium’ (*aerata pila*).

derived all his knowledge of the armillary sphere from Cicero's description, rather than an actual armillary sphere. If Ovid's sphere completely encloses the air within it, then he is presumably visualizing a sphere made of glass, given that the celestial bodies must still be visible within. Of course a bronze cosmic mechanism could be enclosed within a glass sphere, with the sphere then providing an outer limit for the cosmos, or indeed a series of bronze rings could be envisaged, at a stretch, to enclose the air within their circumference.

For evidence of the glass armillary sphere, Gee (2009, 97) points to the later description of Archimedes' armillary sphere by Claudian who pictures Jupiter mocking the attempts of humans to create a cosmos within a glass globe:

Iuppiter in parvo cum cerneret aethera vitro,
risit et ad superos talia dicta dedit:
'hucine mortalis progressa potentia curae?
iam meus in fragili luditur orbe labor?'

When Jupiter discerned the aether in a small glass, he laughed and said to the other gods: 'has the strength of mortal work gone so far? Is my handiwork mocked in this fragile sphere?' (*Shorter Poems* 51, ed. and tr. adapted Platnauer 1922).

Claudian uses the armillary sphere to emphasise how human craftsmanship falls short of the divine, as Jupiter laughs at the attempts of mortals to create a working model of the cosmos. Claudian of course is writing much later, making it difficult to deduce how his description of the armillary sphere relates to those of Ovid and Cicero. Wright dismisses the idea that Archimedes' armillary sphere could have been made of glass on the basis that the technique of glass blowing was not developed until the first century AD, stating that 'while there is no reason to doubt that a celestial sphere of

transparent glass might have been made by Claudian's time, it is doubtful whether it might have been done as early as Ovid's'.⁴⁴

In Claudian's description we encounter a similar dilemma to that which arises in *Fasti* 6. On the one hand we can question the degree to which Claudian's description corresponds to an actual armillary sphere; however, on the other hand, it is clear that Claudian uses the armillary sphere as a means of interrogating the relationship between the cosmos and a working model of it, while emphasising the chasm between divine and human craftsmanship. This idea can also be applied to the description of the world in the text, as it too functions as a model of the cosmos which must ultimately fall short of the complex world which it attempts to describe. In *Fasti* 6, the armillary sphere primarily functions as a means of questioning the relationship between the universe and both physical and textual models of it.

4.6 *The Temple of Vesta and the Metamorphoses*

There remains, however, some difficulty as to how exactly we are to visualize the armillary sphere as described by Ovid and to what degree we can assume a straightforward mapping of this device onto the description of the cosmos which precedes it. Before mentioning the armillary sphere, Ovid first compares the world to the temple of Vesta. Ovid comments on the shape of the temple: *forma tamen templi, quae nunc manet, ante fuisse / dicitur* 'yet the shape of the temple, as it now remains, is said to be as it was before' (*Fasti* 6.265-66). Littlewood (2006, 89) shows how Ovid is referring to the temple's circular or oval form with a domed roof.⁴⁵ Ovid then identifies Vesta with *terra* stating that beneath both there is a perpetual fire

⁴⁴ For a full history of glass blowing see Cummings (2002), who also discusses the different types of glassware created before the development of blown glass. Given that there is evidence for glass factories in Rome by the end of the first century AD (Cummings 2002, 49), we should be cautious in wholly dismissing the possibility of intricate clear glassware in Ovid's time.

⁴⁵ Littlewood (2006, 89) points to coins dating from 55 BC which show the circular shape of the temple.

(*subest vigil ignis utrique*) (6.267).⁴⁶ He then begins his description of the cosmos as cited above. The temple, like the armillary sphere, is designed to function as a model for the cosmos; however when compared to Ovid's depiction of the armillary sphere, the temple appears to be a much poorer fit.⁴⁷ The temple can hardly be imagined to be spherical; at best it may be pictured as having a circular base with a hemispherical domed roof, comparable to a snow globe. We have already seen how it is necessary for the universe, like the earth, to be spherical if the earth is to remain perfectly centred at the universe's midpoint. This suggests that Ovid presents two different models for the universe, which implicitly jar with each other.

These two differing models for the universe may be somewhat resolved if we compare Ovid's depiction of the temple, cosmos and armillary sphere in the *Fasti* to the formation of the universe in the *Metamorphoses*. At *Met.* 1.26-32, Ovid describes how the different elements take up their respective positions in space:

igne convexi vis et sine pondere caeli
emicuit summaque locum sibi fecit in arce;
proximus est aer illi levitate locoque;
densior his tellus elementaque grandia traxit
et pressa est gravitate sua; circumfluis umor
ultima possedit solidumque coercuit orbem.

The fiery and weightless power of the domed sky leapt up and made a place for itself at the highest point of the vault; next to that in lightness and in place is air; earth heavier than these, with its large constituents pulling it down, is pressed down by its own weight; the encircling water took the final position and confined the solid disk.

⁴⁶ The fire in the centre of the earth is discussed further in the excursus.

⁴⁷ Gee (2009, 104): 'Vesta's temple is an *imago mundi* – a visual representation of an abstract philosophical picture of the universe – and is thus parallel to the Sphere of Archimedes'.

Ovid presents a top-down description of the universe's formation as each element takes its respective position. The aither moves to the highest position, followed by the air, while the earth being the heaviest occupies the lowest position, with water encircling it. As presented in this schema, neither the world nor the earth is spherical; rather the earth is a disk which rests at the bottom of a hemispherical world. If we compare this to the two models as presented in *Fasti* 6, then the universe as laid out in the *Metamorphoses* at this point more closely resembles the temple of Vesta.

Immediately following this description of the world's formation in the *Metamorphoses*, Ovid reintroduces the figure of the *opifex rerum* who rolls the earth into a sphere:

principio terram, ne non aequalis ab omni
parte foret, magni speciem glomeravit in orbis.

First, so that the earth might not be in any part unequal, he rolled it into the shape of a great sphere (*Met.* 1.34-35)

Ovid presents a somewhat different image here of the world's formation and this is marked by his repeated use of the term *orbis* to denote in the first case a disk and, only three lines later, a sphere.⁴⁸ It appears that Ovid uses the term's semantic ambiguity to depict two different world views. Wheeler (2000, 18), who likewise notes the difficulty of the repeated usage of *orbis*, questions 'how can it be that the earth has to be made round a second time'. Wheeler suggests that Ovid is presenting two different accounts of universal formation, one which corresponds to the Stoic universe of intelligent design and one corresponding to the anti-teleological universe of Lucretian physics. It appears that Ovid in switching between the two different philosophical explanations of the cosmos is likewise switching between two different

⁴⁸ Wheeler (1995b, 105) states that the image of the earth gaining spherical form can be imagined in terms of wool being gathered or wound into a ball, as suggested by the verb *glomero*. This reading is strengthened if we compare Lucretius' comparison of the universe to a *glomus lanae* at *DRN* 1.30-63 (chapter 2 §3)

cosmological schemas. However, as Hill (1985, 167-68) states, Ovid is also blending mythological and scientific world views; the flat disc cosmography of the Homeric shield of Achilles (*Il.* 18.606) and the Hesiodic shield of Heracles (314-16) with Oceanus encircling the edges of a flat earth is transformed by the demiurge into the spherical earth of the philosophical tradition.⁴⁹ At *Met.* 13.291-94 Ovid alludes directly to the shield of Achilles from the *Iliad*. Ovid criticizes Achilles for being unable to understand the complex cosmos depicted on his shield. He refers to two *diversi orbes* ‘contrasting disks’, which are generally taken to mean the sun and the moon. If read in the light of the above passage from *Met* 1, however, the *diversi orbes* could be a reference to the separate spherical and disk shaped worlds which *orbis* is used to denote.⁵⁰

The same dynamic becomes apparent when we compare the above passages from the *Metamorphoses* with the two models for the cosmos in *Fasti* 6. We have already observed how the universe as initially presented in the *Metamorphoses* is comparable to the temple in the *Fasti*, yet once the demiurge rolls the earth into a sphere it begins to more readily resemble the armillary sphere of Archimedes. Ovid’s description of the actual world in the *Fasti* appears to contain aspects of both models. For instance when read in the light of the armillary sphere, the earth rotating, like a ball resting on no support with air beneath it, positioned at the midpoint of the cosmos appears to easily map onto the philosophical and particularly Stoic world view (*Fasti* 6.269-76). However, the term which Ovid uses for the earth is *orbis*, which, as we have seen at *Met.* 1.32 and 1.35 (above) can mean either a disc or a sphere. We have seen how Ovid is likely to be alluding to Balbus’ description of the sphere in the *DND* at this point, where Balbus

⁴⁹ This is not the only place in which Ovid changes his schema for the universe. Ovid’s ekphrastic opening to book 2 of the *Metamorphoses* in particular illustrates a further world view as depicted on the doors of the palace of the sun. At 2.7 *orbis* is again used for the flat disk of the world. Wheeler (1995b) shows how the ekphrastic opening of *Met.* 2 encourages a re-reading of the cosmogony of *Met.* 1 as a form of ekphrasis. Wheeler also draws out a number of further comparisons with the shield of Achilles from the *Iliad*.

⁵⁰ For a discussion of the allusion to the shield of Achilles at *Met.* 13.291-94 see Hopkinson (2001) 143-45, who also highlights a number of textual difficulties with this passage.

firmly makes the distinction between *orbis* ‘disk’ and *globus* ‘sphere’; the exactness of Cicero’s terminology makes it more difficult to ignore Ovid’s ambiguous use of the term *orbis* in the context of the cosmic arrangement of *Fasti* 6. Ovid also uses the term *convexus* to describe the earth at *Fasti* 6.275. *convexus* is the term which he uses for the domed vault of the sky at *Met* 1.26. If we imagine the earth as domed in this instance it may be looking more towards the hemispherical temple of Vesta. Indeed at the end of his comparison of the cosmos to the armillary sphere Ovid switches back to the temple once more: *par facies templi: nullus procurrit in illo | angulus, a pluvio vindicat imbre tholus* ‘the appearance of the temple is the same [as the earth]: no corner projects upon it and a dome protects it from showers of rain’ (*Fasti* 6.281-82).⁵¹

Wright, among others, has interpreted *Fasti* 6.278 as indicating that the sphere of Archimedes is hung in the temple of Vesta (*globus stat*), just as Cicero describes how Archimedes’ more complex sphere is placed by Marcellus in the temple of Virtue (*Republic* 1.21). If this is the case then Ovid places one model for the cosmos inside another. This, coupled with the natural tendency of ekphrasis to blur the line between the image and what it depicts, allows us to read the universe, as described in the text, as a form of cosmic model as well. In other words we should not envisage a hierarchy between the ‘actual’ universe described in *Fasti* 6 and how the universe is conceptualized using either the model of the armillary sphere or the temple. This again brings us close to a conception of the text that is comparable to the idea of the εἰκὼς μῦθος, ‘mythological likeness’ from the *Timaeus*, which we examined in chapter 4. If we consider how Ovid’s depiction of the armillary sphere is embedded within a description of the universe, which is itself compared to the temple of Vesta and that all this takes place in a text which as we have seen may be comparing itself to a form of cosmos, the

⁵¹ Littlewood (2006, 93) states that the word *tholus* ‘signified a round temple with a domed roof or rotunda; it first occurs in Latin in Vitruvius when he discusses the architectural features of round temples (Vitr. *De Arch.* 4.8). Vitruvius specifies that the height of the rotunda should measure exactly half the diameter of the temple and the curved steps of a monopteral temple, such as Aedes Vestae, one-third of its diameter’.

image which results of a series of interrelated accounts drawing from yet functioning independently from each other could almost be compared to the mechanism of the armillary sphere, with its series of interconnected yet independent orbits, one wheel rotating inside the other.

Depending on which cosmic model we look towards, we are continually forced to re-conceptualize our image of the universe. By portraying multiple models for the cosmos, Ovid causes the universe to be continually altered and reformed. The dynamic is similar to how Ovid portrays the contrasting accounts of the formation of the universe at the beginning of the *Metamorphoses* and in the Janus episode at the beginning of the *Fasti*. Here again it may be supposed that the mutability of Ovid's conceptualisation is an image not only of epistemological uncertainty but also of the shifting relationship between myth-making and world-making. By giving different accounts of universal formation across separate texts, genres and discourses, we are continually forced to readjust our mental landscape and transform our picture of the cosmos. By blurring the line between cosmic models, such as the armillary sphere and the universe itself, Ovid also calls into question the relationship between the text and the universe it seeks to portray.

5. THE SPHERICAL UNIVERSE IN EMPEDOCLES AND DOUBLE-BODIED JANUS

5.1 Empedocles' Spherical and Living Universe

We have argued that Ovid's representation of the body of Janus as a sphere may be read as an allusion to the *Timaeus*, most likely via Balbus' Stoic adaptation in the *De Natura Deorum* or Cicero's translation of the *Timaeus*. Prior to Plato, Empedocles likewise pictured the universe as both a living body and as a sphere. Given that Ovid alludes to Empedocles elsewhere in his depiction of the formation of the universe in the *Fasti*, it is worth considering whether Ovid may also be looking towards Empedocles' depiction of the spherical cosmos and indeed if Empedocles' universal sphere informed Plato's representation of the world in the *Timaeus*.

Empedocles describes how, presumably under the cosmic force of φιλότης, all the elements come together to form a perfect sphere:

οὐ γὰρ ἀπὸ νώτοιο δύο κλάδοι αἰσσονται,
οὐ πόδες, οὐ θοὰ γούν', οὐ μήδεα γεννήεντα,
.....
ἀλλ' ὅ γε πάντοθεν ἴσος <έοι> καὶ πάμπαν ἀπείρων
σφαῖρος κυκλοτερῆς μονίηι περιηγεί γαίων.

For two branches do not dart from its back nor feet nor swift knees nor potent genitals... but it indeed is equal <to itself> on all sides and totally unbounded, a rounded sphere rejoicing in its surrounding solitude (Inwood 34/DK29&28).

Empedocles describes the world at this point as living creature with no limbs protruding from its surface, calling it a σφαῖρος ‘sphere’. The probable context for this fragment may be extrapolated from Hippolytus’ *Refutatio Omnium Haeresium* (7.29.9-7.30.4 = Inwood CTXT 10 (g)) who before quoting it states that this is the shape of the cosmos (κόσμου ἰδέα) as it is when ordered by φιλότης (ὅποια τίς ἐστιν ὑπὸ τῆς φιλίας κοσμουμένη).⁵² It is the precise point in the universal cycle when φιλότης draws all the elements together into a single spherical body, following which νεῖκος will then separate the cosmic body into its constituent elements.⁵³ As we have seen in the *Fasti*, strife similarly separates the

⁵² Simplicius (Commentary on Aristotle’s *Physics* CIAG 10, 1123.25-1125.6 commenting on 250b23-251a4 = Inwood CTXT 21) also describes the spherical world of Empedocles. Inwood also notes Achilles’ *Introduction to Aratus* 6: ‘It is preferable to understand the heaven and the things in it as possessing the shape of a sphere, following Empedocles’.

⁵³ Hippolytus (*Haer.* 7.29.9-7.30.4 = Inwood CTXT 10 (g)) summarizes the cycle as follows: ‘But fire, and water. And earth and air are dying and returning to life. For when the things which come to be by strife’s agency die, love receives them and draws them towards, puts them with, and assimilates them to the universe, so that the universe might remain one, always being organized by love in one manner and form. And when love makes the one out of many and assimilates the separated things to the one, strife again tears them from the

elements from the primordial sphere, while Janus may well be implying the notion of universal cyclicity when he states that he is returning into the shape of an anthropomorphic deity.

The image of the world as a σφαῖρος is comparable to the passage from the *Timaeus* 33b2-4 (above) where the world is described as σφαιροειδές ‘spherical’ and encompassing all things. Indeed *Timaeus* also describes how the spherical world had no need for limbs or external orifices:

χειρῶν δέ, αἷς οὔτε λαβεῖν οὔτε αὖ τινα ἀμύνασθαι χρεία τις ἦν,
μάτην οὐκ ᾔετο δεῖν αὐτῷ προσάπτειν, οὐδὲ ποδῶν οὐδὲ ὄλωσ τῆς
περὶ τὴν βᾶσιν ὑπηρεσίας.

It had no need of hands to grasp with or to defend itself, nor yet of feet or anything that would serve to stand upon; so he saw no need to attach to it these limbs to no purpose (33d3-34a1, tr. Cornford 1935).

Given that *Timaeus* is describing the world as a sphere and that his means of illustrating this is to list the different bodily features and limbs which the universal body does not have a need for, it is likely that Plato is drawing very directly from Empedocles at this point. Given the allusions to Empedocles elsewhere in *Fasti* 1, and in particular to the formation of the universe and its probable cyclicity, it seems likely that Empedocles’ description of the universe as both a body and a sphere may have also provided a model for Ovid’s depiction of the body of Janus, and that Ovid is drawing material from both the *Timaeus* (either directly or indirectly) and Empedocles.

After describing his development from a *moles* and sphere into an anthropomorphic deity, Janus explains why the front and back of his body look the same. He says that his double nature is a marker or leftover from his previously mixed-up state (1.113-14 above): *nunc quoque, confusae quondam nota parva figurae, | ante quod est in me postque videtur idem*

one and makes many, i.e. fire, water, earth, and air, the animals and plants created from these and all the parts of the cosmos which we conceive of’.

‘and even now a small sign of my formerly mixed up form, what is in front and behind in me look just the same’ (1.111-14). In chapter 7 we will analyse further how Janus’ double-formed body may also be read as an allusion to Empedocles, and in particular the composite creatures of the early universe. Garani (2013, 235) states that Janus’ ‘monstrous characteristics’ look back to Empedocles’ composite creatures’, while Hardie (1991, 50) points in particular to Empedocles’ description of these creatures at fr. Inwood 66 / DK 61: πολλὰ μὲν ἀμφιπρόσωπα καὶ ἀμφίστερνα φύεσθαι ‘Many with two faces and two chests grew’. These composite creatures, being an earlier phase in the evolution and composition of living beings are a product of the early history of the universe. Similarly Janus’ body signifies an earlier stage in the universe’s development. At *Fasti* 1.89, Janus is called *biformis* ‘double-formed’. Ovid uses the same term to describe the Minotaur (*Met.* 8.156; *Am.* 2.12.19), centaurs (*Met.* 2.664; 9.121; 12.456) and Hermaphroditus (*Met.* 4.387). As we shall see in chapter 7, these creatures recall both the composite creatures of Empedocles and the *portenta* of the *DRN*, and may be considered as belonging to an early phase in the earth’s development.⁵⁴ That Ovid should likewise choose to call Janus *biformis* here may emphasize even further the allusion to Empedocles.⁵⁵

CONCLUSION

Ovid’s description of the formation of the universe at the beginning of the *Fasti* brings together the ideas of corporeal metamorphosis and universal formation, as the cosmos takes form through Janus’ transformation into an

⁵⁴ Vergil uses the term *biformis* to describe the Scylla at the entrance to the Underworld (*Aen.* 6.25), while Horace uses the term to describe himself as he is transforming into a swan (*Odes* 2.20). Garani (2013, 235) emphasises the connection between the process of Janus’ formation from primeval *chaos* and his ‘articulation into limbs’, and Lucretius’ ‘cosmogonic battle or storm, out of which the four elements were fitted together, resembling bodily members’ at *DRN* 5.432-48, which as we have seen above is also closely tied to Ovid’s depiction of *chaos* at the start of *Met* 1.

⁵⁵ Janus can also be read as an embodiment of liminality as his double form allows him to occupy both sides of the threshold while also showing his failure to fully complete the transition from homogenous ball to a fully anthropomorphic god.

anthropomorphic deity. The allusions to Empedocles at the beginning of the *Fasti* emphasize the notion of continual change and cyclical recurrence particularly as regards the universe. By displaying alternative depictions of the universe in *Fasti* 6, Ovid demonstrates how his image of the universe is continually shifting and alternating between different models. This occurs intertextually as well, as Ovid deliberately contrasts his accounts of universal formation in the *Fasti* with that of the *Metamorphoses*. In effect Ovid portrays parallel universes in parallel texts, using how the texts interrelate and diverge from each other to draw the allusive activity of the poet into the dialogue of cosmic cyclical recurrence. By undermining the hierarchical structure between the model and what it represents, Ovid problematizes the notion of a singular conception of the universe. Ovid illustrates a universe which continually transgresses and blends different texts, genres and discourses. In particular in this chapter we have seen how Ovid continually integrates elements from both the anti-teleological view of the universe and the universe of intelligent design. Janus states at *Fasti* 1.120 that it is his role to turn the axis of the universe (*et ius vertendi cardinis omne meum est*). He essentially controls the different phases of universal peace and strife. The image of Janus turning the axis as the universe cycles through various phases is echoed in the functioning of the armillary sphere where the movements of the celestial bodies are controlled by the revolving of an axial mechanism. The line between universe and universal model is further eroded as Janus may be imagined as merely playing with his model cosmos.

EXCURSUS 4: THE ROTATION OF THE EARTH IN ARISTOTLE'S *DE CAELO*

In his depiction of the armillary sphere in *Fasti* 6, Ovid describes the rotation of the earth on its axis. The term which he uses for this revolving motion is *volubilitas* (6.271). We have seen how Ovid may have appropriated this word from Cicero's *DND* (2.49.9), where it is used to describe the rotation of the cosmos. The nature of the rotation of the earth and how it corresponds to the rotation of the cosmos appears to have been

highly disputed between the different philosophical schools. That Ovid describes the earth as rotating could be a subtle hint towards this debate.

In the *Timaeus* following the description of the different heavenly bodies, the earth is called the most venerable of all the gods and the guardian and maker of night and day, ἰλλομένην δὲ τὴν περὶ τὸν διὰ παντὸς πόλον τεταμένον ‘as she winds around the axis that stretches through all things (40b8-c1, tr. adapted Cornford 1935). There has been some difficulty in establishing how the rotation of the earth about its axis relates to the other movements of the heavenly bodies and the universe. Cornford (1935, 120-34) provides a detailed treatment establishing how the rotation of the universe, fixed stars, planets and the earth relate to each other and the summary provided here depends heavily on Cornford’s extrapolation. The key difficulty is that day and night have been described as the period of a single and most intelligent revolution, namely the revolution of the Same, which carries with it the fixed stars (39c). If this is the case then the earth must remain fixed at the centre of the universe as the fixed stars rotate around it. How then can the earth be described as rotating about its axis?

The revolution of the Same is a movement of the World Soul which is everywhere interwoven from the centre to the extremity of the heavens (36e), so that the entire spherical body of the world rotates on its axis, including the earth. If only this movement existed it would be indistinguishable from a state of rest and there would be no observable change in the relative positions between the heavenly bodies and so no night and day. The earth must revolve around its axis at the centre of the universe in the reverse direction in order not to be carried around by the movement of the Same which runs throughout the whole universe. The effect is that in relation to absolute space the earth appears to stand still while it resists the diurnal movement of the universe.

Aristotle in the *De Caelo*, arguing against this unnecessary complexity, attempts to prove that instead the earth is stationary at the centre of the universe. He refers specifically to the passage from the *Timaeus*:

Ἔνιοι δὲ καὶ κειμένην ἐπὶ τοῦ κέντρου φασὶν αὐτὴν ἕλκεσθαι καὶ κινεῖσθαι περὶ τὸν διὰ παντὸς τεταμένον πόλον, ὥσπερ ἐν τῷ Τιμαίῳ γέγραπται.

And some people say that it lies at the central point [and is wound and moves around the pole which stretches through the universe,] as is written in the *Timaeus* (293b30-32, tr. Mueller 2005).

Aristotle argues against the idea of the revolution of the earth and instead illustrates how the dominant force acting upon the earth is the gravitational pull of objects towards its centre; he states that if the earth was also revolving these objects would not move in a straight line towards the centre (296a24-33). Aristotle also argues that if the earth has the same double movement as the other planet, which he interprets must be what Timaeus means by the ‘winding’ of the earth, this should be visible in perceived positional changes in the rising and setting of the fixed stars (296a34-b5). Given the different philosophical sources which we have observed Ovid alluding to throughout this chapter, it is possible that Ovid’s description of the spherical earth rotating at the centre of a spherical universe reflects an awareness of this complex debate between the different philosophical schools. This argument is strengthened if we compare *Met.* 2.70-77 where Helios has to drive his chariot in opposition to the continuous whirl of the sky.

In the *De Caelo*, Aristotle closely links the idea of the earth rotating around the central axis of the universe to a Pythagorean doctrine which held that the earth was one of the planets which rotated around a central fire and this they argue gives rise to both night and day (293a20-27). Simplicius, commenting on this passage from the *De Caelo*, mentions another Pythagorean doctrine or schema for the cosmos which places the earth at its centre, but has the central fire at the very centre of the earth:

Καὶ οὕτω μὲν αὐτὸς τὰ τῶν Πυθαγορείων ἀπεδέξατο· οἱ δὲ γνησιώτερον αὐτῶν μετασχόντες πῦρ μὲν ἐν τῷ μέσῳ λέγουσι τὴν

δημιουργικὴν δύναμιν τὴν ἐκ μέσου πᾶσαν τὴν γῆν ζωογονοῦσαν καὶ τὸ ἀπεψυγμένον αὐτῆς ἀναθάλλουσαν· διὸ οἱ μὲν Ζηνὸς πύργον αὐτὸ καλοῦσιν, ὡς αὐτὸς ἐν τοῖς Πυθαγορικοῖς ἰστόρησεν, οἱ δὲ Διὸς φυλακὴν, ὡς ἐν τούτοις, οἱ δὲ Διὸς θρόνον, ὡς ἄλλοι φασίν. ἄστρον δὲ τὴν γῆν ἔλεγον ὡς ὄργανον καὶ αὐτὴν χρόνου· ἡμερῶν γὰρ ἐστὶν αὕτη καὶ νυκτῶν αἰτία· ἡμέραν μὲν γὰρ ποιεῖ τὸ πρὸς τῷ ἡλίῳ μέρος καταλαμπομένη, νύκτα δὲ κατὰ τὸν κῶνον τῆς γινομένης ἀπ' αὐτῆς σκιᾶς.

But those who share in them in a more genuine way say that the fire in the centre is the demiurgic power which generates living things from the centre of the whole earth and heats its parts which have grown cold. This is why some of them call fire the tower of Zeus, as <Aristotle> recounts in his *Pythagorica*, others the guardpost of Zeus, as he says in this work, and others the throne of Zeus, as others say. They called the earth a star on the grounds that it too is an instrument of time, since it is the cause of day and night – it makes day when the part facing the sun is illuminated, night because of the cone which is produced from its shadow (512.9-17, tr. Mueller 2005).

Simplicius states that the Pythagoreans had an alternative doctrine which held that at the very centre of the earth, which occupied the centre of the universe, there was fire known as the tower or guardpost of Zeus. In the passage preceding his depiction of the armillary sphere in the *Fasti*, Ovid compares the earth to the temple of Vesta with a central fire burning within it. If Simplicius' above account is of a genuine Pythagorean doctrine, it is possible to interpret Ovid's image of the temple of Vesta in relation to this Pythagorean belief of the fire burning at the centre of the earth. This could provide yet another intertext or universal model for Ovid's depiction of the cosmos in the *Fasti*. It may serve as complementary evidence for Pythagorean elements in Ovid's texts, while it could also hint that Ovid may have been aware of the different cosmological systems described in the *De*

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Caelo, which also includes descriptions of both Platonic and Pythagorean world views.

Chapter 6. Anthropogony and Zoogony

1. INTRODUCTION

This chapter will examine Ovid's depiction of the generation of humans and animals in book 1 of the *Metamorphoses*. It will analyze both the creation of humans by Prometheus after the formation of the universe and the regeneration of human and animal life after the flood. In the first instance, humans are formed from a mixture of the four physical elements, while in the second, moisture and heat are said to be the key ingredients from which all living things can arise. We have already seen in chapter 4 that the four physical elements are inherently unstable and are continually in the process of transforming between each other (§3.5); we have also seen how the elemental qualities are confounded in the primordial universe (§3.2). This chapter will consider the implications of having humans and animals composed of elements that lack a fixed state and will argue that in compounding living beings from a set of continually altering constituents, Ovid instills mutability in the structure of the living body and aligns the body with the primordial universe. It will also consider a number of intertexts for Ovid's depiction of anthropogony and zoogony, including passages from book 4 of Vergil's *Georgics*, Lucretius' *DRN* 5, Plato's *Timaeus*, Empedocles, and the first book of Diodorus Siculus' *Bibliotheca Historica*. This chapter will not only argue that Ovid continues his practice of alluding to multiple sources in his depiction of the formation of the universe and its occupants, but it will also consider how Ovid deliberately integrates a number of different genre categories including scientific and philosophical discourse, mythology and universal history. Throughout this discussion it will be implicitly argued that just as Ovid undermines any notion of a fixed form of human identity by composing humans from an inherently unstable set of transforming elements, so too the text is composed of contrasting allusions and is continually shifting between different modes of discourse.

2. GENERATION OF HUMANS AND ARTISTIC CREATION

2.1 *The First Animals*

In book 1 of the *Metamorphoses*, following the depiction of the formation of the universe from primordial *chaos* and after the allocation of the elements to their designated regions, Ovid turns to the generation of humans and other living beings. He describes how life begins almost instantaneously as each type of living creature arises in the region of space with which it is best suited:

neu regio foret ulla suis animalibus orba,
astra tenent caeleste solum formaeque deorum,
cesserunt nitidis habitandae piscibus undae,
terra feras cepit, volucres agitabilis aer.

So that no region would be without its living creatures, the stars and the forms of the gods took heaven's floor, the waves were given to the shimmering fish to live in, while the earth took the beasts, and the easily-movable air, the birds (1.72-5).

Each form of living being is created in order to occupy the region of space to which it is designated.¹ The forms of the gods (*formae deorum*) are identified with the stars (*astra*), which likewise must be living beings, and position themselves in the highest region of the world. The birds in turn occupy the air, the beasts the earth, and the fish the sea. This is presumably because each living creature consists of a higher proportion of the element which corresponds to the region in which it is situated.

Ovid may have drawn this framework for the positioning of the different forms of living beings in the different spatial regions from Cicero's *De Natura Deorum*, where Balbus states that each type of living creature is born in the region most suited to it: *cum igitur aliorum animantium ortus in*

¹ Wheeler (2000, 21) describes this as a 'teleological joke' as the universe is not ordered for the living, but 'the living are created because of *horror vacui*'.

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terra sit aliorum in aqua in aere aliorum ‘since some forms of living beings come to life on earth, others in water, and others in the lower-air’ (2.42.1-2). Balbus also states that since the stars are begotten in the aether, they therefore must be gods:

quare cum in aethere astra gignantur, consentaneum est in his sensum inesse et intellegentiam, ex quo efficitur in deorum numero astra esse ducenda.

So since the stars have their origin in the aether, the logical inference is that they possess feelings and understanding, which is why the stars must be numbered among the gods (2.42.8-11, tr. Walsh 1997).

Balbus argues that since aether is the purest of the elements and because the stars are sprung from the aether, they must be divine as they are composed of this element alone rather than an admixture of the different elements (2.39).² They are therefore identified as gods because of their elemental purity and because they possess intelligence. This opens up the possibility that Ovid is alluding to Cicero, as both identify the stars as divine living beings. The argument for this allusion is strengthened by a number of close verbal echoes between the two passages. For instance Ovid describes the stars as boiling up through the sky (*effervesce*) at *Met.* 1.71, and Balbus uses this same term in the *DND* (2.27.6) to describe the process of elements transforming into each other and in particular how the lower air is vaporized water.

Balbus prefaces his statement that the stars are divine and are begotten from the aether with a reference to Aristotle, who he states regarded it as nonsensical to think that no living being is born in the region best adapted for the creation of life (2.42). This suggests that the theory that the stars are divine and are begotten from the aether is derived or adapted from Aristotle. Walsh (1997, 177) notes that this is presumably a reference

² Barchiesi (2005, 161) also notes a number of the comparisons outlined above between the *Metamorphoses* and the *DND*.

to Aristotle's now lost *De Philosophia*. Looking further along the chain of textual linkages it is probable that Aristotle adapted this theory from Plato. In the *Timaeus*, following an exposition on the movement of the celestial bodies, the stars are called divine and are said to be mostly composed of fire:

τοῦ μὲν οὖν θείου τὴν πλείστην ἰδέαν ἐκ πυρὸς ἀπηργάζετο, ὅπως ὅτι λαμπρότατον ἰδεῖν τε κάλλιστον εἶη, τῷ δὲ παντὶ προσεικάζων εὐκύκλον ἐποίει, τίθησίν τε εἰς τὴν τοῦ κρατίστου φρόνησιν ἐκεῖνῳ συνεπόμενον, νείμας περὶ πάντα κύκλῳ τὸν οὐρανόν, κόσμον ἀληθινὸν αὐτῷ πεποικιλμένον εἶναι καθ' ὅλον.

The form of the divine kind he produced mostly from fire, so that it might be most bright and beautiful to see; and after the likeness of the universe he made them well-rounded, and set them in the intelligence of the supreme to keep company with it, distributing them in rings all around heaven, to be in truth a *cosmos* for it, wrought over the whole (40a2-6, tr. adapted Cornford 1935/1997).

Timaeus describes how the stars are divine and are mostly composed of fire. He says that they are 'well-rounded' (εὐκύκλος), presumably referring to their spherical shape, as they mirror the form of the universe itself. They share in the intelligence of the δημιουργός and he places them in rings or orbits which run through the heavens.³

Immediately before this description of the stars, Timaeus groups them with the other categories of living creatures:

³ The δημιουργός distributing the stars in rings throughout the heaven is also relevant to the examination of the armillary sphere in the previous chapter and in particular how the δημιουργός is compared to the craftsman of such a sphere. The passage in the *Timaeus* (40d2-3) which most readily indicates that Timaeus is referring to an armillary sphere in his description of the movement of the heavenly bodies follows shortly after this passage (40a2-6). See further chapter 5 (§4.3)

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εἰσὶν δὴ τέτταρες, μία μὲν οὐράνιον θεῶν γένος, ἄλλη δὲ πτηνὸν καὶ ἀεροπόρον, τρίτη δὲ ἔνυδρον εἶδος, πεζὸν δὲ καὶ χερσαῖον τέταρτον.

And there are four [living creatures], first, the heavenly race of gods, next the winged, who are able to traverse the air, third, the watery forms, and fourth, those who go on foot upon dry land (39e10-40a2).

Similar to the *Metamorphoses*, the living creatures in the *Timaeus* appear in the world almost instantaneously, without any explanation as to how or where they came from. An account of their origin is delayed until 42e-43a. In the *Metamorphoses*, the placement of the different animal species in the different regions is the last act in the formation of the world which can be definitely attributed to the figure of the *opifex rerum*, who we have seen is closely associated with the demiurge of the *Timaeus* (chapter 4 §3.1). The passage in the *Metamorphoses* (1.72-5 above) which first describes the emergence of the living beings may be seen to contribute to the culmination of evidence suggesting an allusion either to the *Timaeus* or an intermediary text or texts.

2.2 *The Generation of Humans from the Four Elements*

Following the placement of the living creatures in the different regions of space, Ovid gives two possible accounts for the generation of humans:

natus homo est, sive hunc divino semine fecit
ille opifex rerum, mundi melioris origo,
sive recens tellus seductaque nuper ab alto
aethere cognati retinebat semina caeli,
quam satus Iapeto, mixtam pluvialibus undis,
finxit in effigiem moderantum cuncta deorum.

Man was born; perhaps he was made from divine seed by the *opifex rerum*, the source of a better world; or perhaps the new earth recently separated from the high aether retained the seeds of the

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kindred sky, which the offspring of Iapetus mixed with rain water and shaped into the likeness of the all-controlling gods (1.78-83).

Ovid gives two alternative accounts explaining the origin of humans; either they were created *divino semine* ‘from divine seed’ by the figure of the *opifex rerum*, or they were made from a mixture of the elements by Prometheus. Ovid gives both a philosophical and a mythological account of the formation of humans.⁴ The philosophical explanation is largely in keeping with the preceding account of the cosmogony; however, as Wheeler (2000, 22) states

, the mythological explanation ‘compels the audience to supply an alternative mythological theogony (spanning three generations),’ in order to account for the reference to Prometheus as *satus Iapeto* (1.82). Given that Ovid’s account of the ages of man follows these two alternative explanations for the origin of humans, the introduction of Prometheus marks the shift from the scientific opening of the *Metamorphoses* to the mythological discourse which will follow.⁵

Ovid describes how Prometheus shapes (*fingere*) humans in the likeness (*effigies*) of the gods from a mixture of the elements. The image is one of artistic creation as Prometheus forms humans like figures out of clay. In Hesiod’s *Works and Days* (70-71), Hephaestus moulds Pandora out of clay, while Callimachus (uncertain fr. 493) likewise has Prometheus fashion the first humans from clay: εἴ σε Προμηθεύς | ἔπλασε, καὶ πηλοῦ μὴ ἕξ ἑτέρου γέγονας ‘if Prometheus has molded you, and you have not come into

⁴ The possibility that the *opifex rerum* fashioned humans from *divina semina* may recall how the demiurge in the *Timaeus* has the gods create humans (41b-c) and sows their souls like seeds into the earth, moon and other stars (42d). *semina rerum* is also one of Lucretius’ terms for atoms (Sedley, 1998, 38). The phrase *satus Iapeto* (*Met.* 1.82) also contains the image of the sowing of seed.

⁵ Wheeler (2000, 22): ‘Ovid’s technique of giving alternative explanations is a typical feature of didactic and aetiological literature... the Promethean creation of man receives the greater emphasis and fundamentally contradicts the program of the divine creator, if not the assumptions of the preceding narrative’.

being from another clay' (ed. Trypanis 1958/1975).⁶ Having Prometheus create humans in the *Metamorphoses* not only marks an alternative mythological narrative, but may suggest an allusion to Callimachus, especially given the Callimachean elements we have already identified in the poem (chapter 2 §2).⁷

If we follow the Promethean narrative, humans are composed of a mixture of the elements, as the earth, only recently separated from the aether, retains elements from the sky and this is mixed with rain water (*Met.* 1.80-82 above). This recalls the composition of the primordial universe from a mixture of elemental qualities, where the opposites hot and cold, wet and dry, soft and hard, and heavy and light were in conflict with each other (*Met.* 1.15-21). Wheeler (2000, 22) likewise states that although the Promethean mixture 'is shaped into the image of the gods, [it] also implies humanity's kinship with chaos'. We have seen in the previous chapter how *chaos* itself may be considered anthropomorphic. The composition of humans from the combination of the four elements suggests a form of universal retrogression, as the elements are once more mixed together, accept now in the guise of the human body. It should not be overlooked, however, that when Ovid describes Prometheus fashioning humans from the elements, Ovid uses the metonyms *semina caeli* and *pluviales undae* to denote the elements of air and water. This reflects on a verbal level how Ovid underlines the mythological image of Prometheus fashioning humans from clay with a scientific image of the mixing of the four primary elements.

The formation of living beings from a mixture of the four elements in the *Metamorphoses* is likely to be also drawing from philosophical discourse and particularly the four element theory ultimately derived from

⁶ The creation of the first humans from clay can already be seen in the *Atrahasis*, the Mesopotamian flood myth, where the mother goddess Mami created men out of clay mixed with the blood of a slain god (Dalley 1998, 15-17).

⁷ In scientific discourse, Aristotle in the *Parts of Animals* compares how nature fabricates animals from flesh with how artists mould animals out of clay (654b.29-32). This passage from Aristotle is discussed further below (§3.1).

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Empedocles. Lucretius clearly identifies Empedocles with the four element theory in the *DRN*:

et qui quattuor ex rebus posse omnia rentur
ex igni terra atque anima procreare et imbri.
quorum Acragantinus cum primis Empedocles est ...

And [there are those] who think everything can be produced from four things: fire, earth, wind and rain. Empedocles of Acragas is first among them ... (1.714-16, tr. adapted Smith 2001)

As we have seen, Lucretius rejects the notion that all things are composed of the four elements or that the elements may be viewed as primary constituents. Empedocles, however, describes how Aphrodite created all living beings from a mixture of the four elements:

εἰ δέ τί σοι περὶ τῶνδε λιπόξυλος ἔπλετο πίστις,
πῶς ὕδατος γαίης τε καὶ αἰθέρος ἡελίου τε
κιρναμένων εἶδη τε γενοῖατο χροῖά τε θνητῶν
τόσσ' ὅσα νῦν γεγάασι συναρμοσθέντ' Ἀφροδίτη

And if, concerning these things, your conviction is in any way lacking in substance, as to how from the blending of water and earth and aither and sun the forms and colours of [all the] mortals came to be, which have now come to be, fitted together by Aphrodite (Inwood 74 / DK 31).

Aphrodite, who may be identified as the cosmic principle φιλότης in Empedocles, is given the task of fashioning human beings from the four elements.⁸ Despite Lucretius' rejection of the four element theory, he refers

⁸ Garani (2007, 34-50) discusses the various personified forms of the cosmic force of φιλότης in Empedocles. Garani (2007, 48) shows that, along with Aphrodite, Empedocles also designates φιλότης with the following alternative names: Στοργή, Ἄρμονία, Γηθοσύνη.

to Venus at the opening of the *DRN* (1.4-5) as the ultimate generator of living things (*per te quoniam genus omne animantum concipitur*). This makes it likely that Lucretius was familiar with the above passage from Empedocles and similarly identified his Venus with Empedoclean φιλότης.⁹

We have seen in chapter 4 (§3.5), particularly in relation to the speech of Pythagoras from book 15 (244-51), that the four elements do not maintain fixed boundaries and identities but are continuously undergoing a process of transforming into each other. By having humans generated from a mixture of the elements, Ovid instills a fundamental sense of mutability in the very makeup of human identity. This idea linking the mutability between the elements and the composition of corporeal bodies can be seen in Cotta's criticism of Balbus' claims in books 3 of Cicero's *De Natura Deorum*. Cotta states that if all existing stuff from which all things are formed is liable to change (*mutabilis*), no body (*corpus*) can exist which is not immune from destruction:

Etenim omne corpus aut aqua aut aer aut ignis aut terra est aut id quod est concretum ex iis aut ex aliqua parte eorum, horum autem nihil est quin intereat.

And since every body is compounded of either water, air, fire, or earth or a combination of some or all of these, none of them is without ruin (3.30.8-12).

As every element is liable to change into the others, there can be no stable or fixed form and so everything is subject to destruction when it transforms into something else.¹⁰

⁹ Sedley (1998, 17) and Garani (2007, 40) discuss the identification of Venus and Mars at the beginning of the *DRN* with Empedocles' cosmic principles.

¹⁰ The reason for this is established later in the *DND* and is attributed to the natural tendency for each element to move to its corresponding position in space, ultimately leading to the separation of elemental compounds such as the human body (3.34).

This appears to underline the significance that living beings are created from a mixture of the elements in the *Metamorphoses*, especially when taken in conjunction with the elemental cycle in *Met.* 15. The elemental cycle shows that the elements lack a stable identity as they are continually undergoing transformation between each other. By having Prometheus shape humans from a mixture of fundamentally changeable constituents, the very nature of human identity and its corporeal composition becomes itself associated with metamorphosis. While we must be cautious in applying any theory expounded by Pythagoras in *Met.* 15 to the rest of the *Metamorphoses*, this suggests a scientific cause, at the most basic level of bodily composition, which could account for the corporeal transformations which take place throughout the preceding books of the *Metamorphoses*.

2.3 Elemental Mixtures in the *Timaeus*

A similar dynamic linking elemental change with bodily metamorphosis can be seen in the *Timaeus*, where inter-species transformation is mapped onto the elemental cycle. In the *Timaeus* living beings are also compounded from the elements, as the demiurge has the gods fashion the human body from a mixture of the four elements: πυρὸς καὶ γῆς ὕδατός τε καὶ ἀέρος ... μέρια ‘portions of fire, earth, water and air’ (42e8-43a1).¹¹ Closely preceding this passage Timaeus first describes his theory of metempsychosis based on behavioural characteristics (42b-d), which he later expands upon at the conclusion of the dialogue (91a-92c):

¹¹ Timaeus describes how when the gods form humans from this mixture of the four elements, instead of using the indissoluble bonds (δεσμοί) from which they themselves are held together, they glue (συγκολλάω) humans from πυκνοὶ γόμφοι ‘compact bolts’ making each of them a unity of proportions (*Ti.* 43a2-6). This may be an allusion to Empedocles where living beings are generated when the earth is mixed with two parts Nestis out of eight and four parts Hephaistos, and τὰ δ’ ὅστέα λευκὰ γέγοντο ἁρμονίης κόλλησιν ἄρηρότα θεσπεσίηθεν ‘they become white bones fitted together with the divine glues of harmony’ (fr. 62/96). At fr. 101/87 Aphrodite is also said to have wrought their eyes γόμφοις ... καταστόργοις ‘with the dowels of love’ (tr. Inwood). Hershbell (1974, 148) discusses this potential allusion.

Men who behave badly and cowardly are transformed into women for their next life; light-witted men transform into birds; men with no interest in philosophy and who are only concerned with earthly matters transform into land animals; while the most stupid and senseless of all transform into fish. As each species of animal is associated with one of the elements, the transformation of humans is not entirely the result of behaviour, but by extension is related to the element which that particular species of animal is associated with. This is further illustrated in that the way in which a man can return to the form of his first and best condition is through controlling, by means of reason, the turbulence of the four elements. He must draw back into his cycle τὸν πολὺν ὄχλον καὶ ὕστερον προσφύντα ἐκ πυρὸς καὶ ὕδατος καὶ ἀέρος καὶ γῆς ‘all that turmoil of fire, air, water and earth that had later grown about it’ (42c5-d1, tr. Cornford 1935/1997).

There are a number of suggestions that indicate that Plato in the *Timaeus* is similarly integrating mythology into his images for the creation and transformation of human beings. Timaeus describes the gods as ‘remoulding’ (μεταπλάττοντες) humans into different shapes (92b3); both Hesiod (*Works and Days* 70) and Callimachus (uncertain fr. 493) use the same basic verb πλάσσω when describing Hephaestus shaping Pandora and Prometheus moulding the first humans from clay (above). When viewed in the light of the type of theories stemming from Empedocles and the *Timaeus* and the more strictly mythological images from Hesiod and Callimachus, it may be argued that Ovid is deliberately combining mythology and scientific or philosophical discourses by integrating a four element theory into his image of Prometheus fashioning humans from clay.

3. REGENERATION OF HUMANS AND ANIMALS AFTER THE FLOOD

3.1 *The Generation of Humans after the Flood*

Later in book 1 of the *Metamorphoses*, Ovid again uses imagery from both artistic creation and scientific discourse to describe the regeneration of humans and animals after the flood. After Jupiter in anger destroys the human race with the flood, Pyrrha and Deucalion, the only survivors, are given the role of repopulating the earth. The goddess Themis instructs them

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to throw stones behind their backs and these stones grow up into people (1.367-402).¹² Ovid describes how the stones soften and begin to take shape, comparing the process to the carving of a statue:

mox ubi creverunt naturaque mitior illis
contigit, ut quaedam, sic non manifesta, videri
forma potest hominis, sed uti de marmore coepta,
non exacta satis rudibusque simillima signis.
quae tamen ex illis aliquo pars umida suco
et terrena fuit, versa est in corporis usum;
quod solidum est flectique nequit, mutatur in ossa;
quae modo vena fuit, sub eodem nomine mansit.

Soon, when they had grown and a gentler nature had come upon them, a certain human form could be perceived, though not clear, but as if begun from marble, not drawn out enough and most resembling a crude image. But the earthly part of them, damp from some moisture was changed to be used for the body; what was solid and could not be bent changed into bone; what had been vein kept its own name (1.403-10).

Ovid uses imagery from the carving of statues from blocks of marble to illustrate how the human form begins to take shape from the rough stone.¹³ The part of the stones which was more solid was changed into bone, while the veins (*vena*) which ran through the stone became blood vessels and so retained their name. Ovid also recalls the imagery of Prometheus moulding humans from a lump of clay, as he describes how the damp earth forms the

¹² The depiction of humans being generated from the stones thrown by Deucalion after the flood can already be seen in the Hesiodic *Catalogue of Women* (Fragment 82 from Strabo 7.322). Pindar in *Olympian Odes* 9.42 also says that word for men, *λαός*, is derived from the word for stone, *λάας*, because of this. Vergil (*Georg.* 1.60) and Pseudo-Apollodorus (1.7.2) also recall Deucalion's throwing of the stones and the formation of people.

¹³ Barolski (2014, 63-64) compares Ovid's depiction of the human forms emerging from the stone with Michelangelo's 'unfinished' *Captives*.

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flesh of the human body. It would appear that Ovid is integrating two images of artistic creation, the carving of statues from a solid block of marble and the moulding of figurines from a soft and wet lump of clay.¹⁴

Ovid's use of imagery from the creation of statues to describe the formation of humans after the flood may also be drawing from imagery from scientific discourse and in particular Aristotle's *Parts of Animals*, where Aristotle compares the creation of living creatures with an artist forming a figure from clay:

Ὡσπερ γὰρ οἱ πλάττοντες ἐκ πηλοῦ ζῶον ἢ τινος ἄλλης
ύγρᾶς συστάσεως ύφιστᾶσι τῶν στερεῶν τι σωματων, εἶθ'
οὔτω περιπλάττουσι, τὸν αὐτὸν τρόπον ἢ φύσις
δεδημιούργηκεν ἐκ τῶν σαρκῶν τὸ ζῶον.

For just as when artists are moulding an animal out of clay or some other moist substance, they use for support some solid body and then mould the clay around, so nature has fabricated animals from flesh (654b.29-32, ed. Peck 1937 and tr. adapted Lenox 2002).

Aristotle describes the artist moulding the clay around a more solid structure and compares this to the way the flesh of animals is formed around the skeleton. Ovid uses very similar imagery when describing the regeneration of humans after the flood. In particular the transformation of the damp earth to flesh at 1.407-8 (above) is a strikingly similar image to that in Aristotle. While Ovid's depiction of the skeletal system as the hard part of the stone that remains: *quod solidum est flectique nequit, mutatur in ossa* 'what was solid and could not be bent was transformed into bone' (1.409), is also similar to Aristotle's depiction of the supporting structure used by the artist to prop up the clay. While there is not enough here to definitely state that

¹⁴ Barchiesi (2005, 199) sees the description of the humans forming from the stones as rough (*rudis*) as a direct allusion to the depiction of *chaos* at 1.3 as a *rudis indigestaque moles*. Furthermore Barchiesi uses this allusion to strengthen the analogy between the creation of the universe and artistic creation.

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Ovid is alluding to Aristotle, the comparison with the *Parts of Animals*, shows another example of the application of imagery from artistic creation to the formation of animals in a scientific discourse from the period of Greek thought that underlies Ovid's conception of cosmogony and the origin of living beings.

3.2 Zoogony after the Flood: Comparisons with Lucretius and Empedocles

Ovid's depiction of the zoogony after the flood comes shortly after the regeneration of humans. He says that it is the balance of heat and moisture when they come together that forms all living things:

quippe ubi temperiem sumpsere umorque calorque,
concupiunt et ab his oriuntur cuncta duobus;
cumque sit ignis aquae pugna, vapor umidus omnes
res creat et discors concordia fetibus apta est.

When the correct mixture is acquired and moisture and heat take hold, from these two everything arises. And though fire fights waters, a moist warmth creates all things, and a discordant concord is adept at procreation (1.430-33).

Despite fire and water being opposites the blending of two of their qualities, heat and moisture, is said to create all living things. The image of these two elemental qualities being mixed with each other recalls the confounding of the elemental qualities in primordial *chaos* at the beginning of the *Metamorphoses* (1.18-20).¹⁵ As we have discussed in chapter 3 (§2.2), the phrase *discors concordia* is a reference to the system of generation and cosmic cycles in Empedocles. The blending of moisture and heat may also contain a more direct allusion to a passage from Empedocles which likewise describes the first generation of living beings as composed of fire and water:

οὐλοφουεῖς μὲν πρῶτα τύποι χθονὸς ἐξανέτελλον,

¹⁵ This passage is discussed in chapter 3 §4.2 and in chapter 4 §3.3.

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ἀμφοτέρων ὕδατός τε καὶ εἶδεος αἴσαν ἔχοντες·

First there came up from the earth whole-natured outlines having a share of both water and heat (Inwood 67 / DK 62).¹⁶

Empedocles describes how the first generation of ‘whole-natured’ forms are composed of both heat and water. As we shall see, the whole-natured forms which Empedocles describes here are the generation which follow that of the hybrids or dream-like creatures. The first generation of whole-natured forms occupies an intermediary position in the sequence of generation, following the hybrid creatures, but before sexual reproduction has begun. This is similar to the generation of animals following the flood in the *Metamorphoses*, which arise through spontaneous generation rather than sexual reproduction.

In Lucretius’ depiction of zoogony in the *DRN* (5.783-836) the first living creatures are also formed from a mixture of heat and water. Lucretius states that the earth (*terra*) is rightly given the name mother, as from her all living things are produced:

multaque nunc etiam existunt animalia terris
imbribus et calido solis concreta vapore;
quo minus est mirum si tum sunt plura coorta
et maiora, nova tellure atque aethere adulta.

Even now many animals spring up from the earth, condensing from showers and the warm moisture of the sun; so it is less amazing, if at that time, they emerged in greater numbers and larger size, having grown when the earth and sky were new (5.797-800, tr. adapted Gale 2009).

¹⁶ Barchiesi (2005, 200-203) notes Empedocles frs. 64/66, 66/61, and 67/62 in relation to Ovid’s depiction of zoogony and spontaneous generation after the flood.

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Lucretius compares the spontaneous generation of animals from mud, which he states still occurs today, with the first emergence of animals from the earth in the zoogony. The multitude of creatures produced in this early phase in universal history is attributed to the higher proportion of heat and moisture still present in the soil (5.806). As in Empedocles, these creatures are the result of a mixture of heat and water. Campbell (2006, 66) compares this passage from the *DRN* to Empedocles fr.74/31 (discussed above), where Aphrodite fashions living creatures from a mixture of the elements. It appears likely that Ovid was familiar with Lucretius' depiction of the spontaneous generation of the first living creatures. When Prometheus creates humans from clay at *Met.* 1.80-83, Ovid states that the sky and earth had only recently been separated and this is used to explain the high quantity of other elements still present in the earth. The idea is the same in the *DRN*, as Lucretius likewise argues that that the earth was more productive in the early stages of universal history.¹⁷

Ovid also uses the imagery of spontaneous generation when describing the zoogony following the flood in the *Metamorphoses*:

Cetera diversis tellus animalia formis
sponte sua peperit, postquam vetus umor ab igne
percaluit solis caenumque udaeque paludes
intumuere aestu fecundaque semina rerum,
vivaci nutrita solo ceu matris in alvo,
creverunt faciemque aliquam cepere morando.

¹⁷ Gale (2009, 165) states that Lucretius' zoogony 'seems heavily and quite self-consciously indebted to Empedocles'. Gale (2009, 166) reads Lucretius' statement that we should not be amazed by the spontaneous generation of animals from the earth in the early history of the world as specifically directed against Empedocles' wonder when the tribes of mortals pour forth from the earth (Inwood 61/ DK 35.16-17): τῶν δέ τε μισγομένων χεῖρ' ἔθνεα μυρία θνητῶν, | παντοίαις ιδέησις ἀρηρότα, θαῦμα ιδέσθαι 'And as they were mixed ten thousand tribes of mortals poured forth, fitted together in all kinds of forms, a wonder to behold'.

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The earth produced of its own will the other animals, in their various forms, when the lingering moisture had been warmed by the sun's fire, and the mud and the damp marshes had swelled up in the heat, and the fertile seeds of things nourished in the life-supporting earth, as if in a mother's womb, waited and grew and took on a particular likeness (1.416-21).

The creation of the animals from mud recalls the image of Prometheus shaping humans from clay (*Met.* 1.82-83), and again can be read in terms of the mixture and confounding of the elements. Not only is a mixture of earth and water required to form the animals but heat is needed to activate their creation, while the earth is compared to a mother's womb (*alvus*), from which these mammals will emerge.¹⁸

Ovid's simile comparing the animals that are formed in the earth to a baby inside a mother's womb appears to be an allusion to Lucretius' description of the first mammals being generated from the earth.¹⁹ Lucretius likewise refers to the earth as *mater* (*DRN* 5.795) and describes how the first animals emerged from wombs whenever there was a great superfluity of moisture in the soil; wherever a suitable spot occurred, *crescebant uteri terram radicibus apti* 'wombs grew up attached to the earth by roots' (5.808).²⁰ Lucretius draws a number of comparisons between spontaneous generation in the early history of the universe and that which he states still occurs today. First he compares the emergence of the first birds from eggs hatched out by the spring-like climate of the early universe to cicadas

¹⁸ While *alvus* more generally refers to the 'belly' or 'digestive organs', the same phrase *matris in alvo* is used by Horace (*Odes* 4.60.20) to refer to a mother's womb. Varro in the *De Re Rustica* (3.16.15) says that beehives are called *alvi* because of the nutritious honey which they contain. In all cases the dominant image is that of nourishment and protection.

¹⁹ At *Met.* 7.125-30, Ovid also makes a direct comparison between the forming of the foetus in the womb and the spontaneous generation of humans when describing the warriors which arise from the serpent teeth sown by Jason.

²⁰ Barchiesi (2005, 200-1) notes the general parallels between the generation of animals at *Met.* 1.416-5 and *DRN* 783 ff. He also notes the connection with Empedocles fr. Inwood 64 / DK 57.

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emerging from chrysalises: *folliculos ut nunc teretis aestate cicadae | lincunt sponte sua victum vitamque petentes* ‘just as now the cicadas in summer emerge by their own will from their round pods seeking sustenance and life’ (803-4).²¹ Lucretius then compares the cicadas emerging from their chrysalises to the first mammals emerging from the wombs which spring up from the earth.

The crickets are said to emerge by their own will (*sponte*) from their pods. Ovid uses the same term when describing the earth producing the various animals by its own will (*sponte*) in his account of spontaneous generation (*Met.* 1.417). Ovid compares the animals forming inside the earth to a child inside its mother’s womb (*matris in alvo*). This may well be an allusion to the actual wombs which Lucretius describes as springing up from the earth in the *DRN*, as Ovid reduces Lucretius’ description of the sprouting wombs to a simile comparing the swelling earth to a mother’s womb.²²

²¹ In the speech of Aristophanes from Plato’s *Symposium* (191c) early humans, before their genitals were moved to the front, had to reproduce like Crickets from the earth. Campbell (2003, 70-71), who discusses a number of different accounts of spontaneous generation in relation to the *DRN*, notes how in Greek biology eggs were compared to chrysalises, because of their visual similarity and similar function in feeding the young enclosed. This is discussed by Aristotle (*Gen. An.* 762b28-763a7) who dismisses the idea of original spontaneous generation from eggs. Campbell also draws an intriguing comparison with Empedocles who uses an analogy between eggs and olives (Inwood 79 / DK 79): οὕτω δ’ ὠιστοκεῖ μακρὰ δένδρεα πρῶτον ἐλαίας ‘in this way tall trees produce olive eggs first’. Campbell goes on to say: ‘The original context for this is lost, but it would be a useful way of accounting for the birth of the first eggs. The analogy between eggs and chrysalises provides a bridge between Lucretius’ standard example of spontaneous generation, the worms, appearing directly from the ground, and the more difficult idea of large mammals appearing from wombs rooted to the earth’.

²² We might also compare here the strange image comparing the swelling of Adonis’ blood to a clear bubble rising in yellow mud at the end of *Met.* 10: *sic fata cruorem | nectare odorato sparsit, qui tinctus ab illo | intumuit sic, ut fulvo perlucida caeno | surgere bulla solet* (10.731-34).

3.3 *Spontaneous Generation and DRN 5*

Ovid, like Lucretius, compares the generation of animals after the flood with spontaneous generation which he says still occurs today. Ovid points in particular to Egypt, where he says spontaneous generation can be observed after the Nile floods and then recedes. The moist earth is then heated by the sun and animals can be found emerging from beneath the drying river bed:

plurima cultores versis animalia glaebis
inveniunt; et in his quaedam perfecta per ipsum
nascendi spatium, quaedam modo coepta suisque
trunca vident numeris, et eodem in corpore saepe
altera pars vivit, rudis est pars altera tellus.²³

The farmers, as they turn the clods, find many animals; and they see among them some complete and at the very point of birth, some only just begun, stunted and without their limbs, and often in the same body one part is alive and the other part is rough earth (1.425-29)

Here we see the extension of viewing the earth as a mother, as lifting the clay reveals bodies in various stages of development as if still within the womb. As these animals are not fully formed, part of their bodies is still raw earth. Ovid appears to be integrating imagery from the moulding of clay statues with the image of a semi-formed animal fetus. Ovid's description of the earth as a womb and the partially developed bodies revealed beneath its surface further strengthens the likelihood that Ovid is alluding to the wombs which Lucretius describes as sprouting from the ground at *DRN* 5.808. It should not be overlooked that both Ovid and Lucretius use imagery from gestation when describing animals arising from apparently inanimate matter.

²³ I print the text of Tarrant's OCT; however, Anderson in his 2008 Teubner opts for the alternative arrangement of 1.426-27: *et in his quaedam modo coepta per ipsum / nascendi spatium, quaedam imperfecta*. The meaning in both arrangements remains relatively the same.

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This may be seen as a further integration of aspects from science and mythology as mother earth creates animals through spontaneous generation.

Ovid's description of the partially formed bodies beneath the Nile floodplain may also invoke an allusion to Lucretius' depiction of the *portenta*, the monstrous deformed creatures, which occurred in the early history of the world and which ultimately failed to reproduce. Lucretius describes these *portenta* as follows:

androgynum, interutrasque nec utrum, utrimque remotum,
orba pedum partim, manuum viduata vicissim,
muta sine ore etiam, sine vultu caeca reperta,
vinctaque membrorum per totum corpus adhaesu, ...

The hermaphrodite, in between each sex yet neither, and separated from both; Some without feet, others again bereft of hands; some found dumb also without a mouth, some blind without eyes, some bound fast with all their limbs adhering to their bodies, ... (5.839-42, tr. adapted Gale 2009).

Lucretius describes how at this point in the history of the world, the earth produces a series of misshapen and ultimately unviable creatures. Their bodies are configured at random, as they are constituted from a chaotic mixture of limbs. They only survive briefly due to their bodies being ill adapted for life and for one generation as they lack the ability to reproduce.²⁴ Ovid's half-formed bodies beneath the Nile flood plain bear a striking resemblance to Lucretius' *portenta*. In particular the description of their bodies as being ill-formed and without limbs (*trunca numeris*) resonates with Lucretius' depiction of the monsters as being bereft of feet

²⁴ Campbell (2003, 99), in his detailed treatment of this passage, emphasizes the chaos of generation at this point, as impossible monsters are created alongside viable creatures: 'here it is clear that no pre-existing pattern of life is available for the earth to follow in her creation: She throws up creatures at random'.

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(*orba pedum partim*). Ovid also alludes to this passage in his description of Hermaphroditus later in the *Metamorphoses*:

nec duo sunt sed forma duplex, nec femina dici
nec puer ut possit, neutrumque et utrumque videntur.

They were not two but a double shape, that could be said to be neither woman nor boy, they seemed to be neither and both (4.378-79).

This clearly recalls Lucretius' description of the hermaphrodite as *interutrasque nec utrum, utrimque remotum* (5.839).²⁵ This demonstrates that Ovid was clearly familiar with Lucretius' depiction of the *portenta*.

Another example of the phenomenon of spontaneous generation is given in book 15 of the *Metamorphoses*. In another passage rife with Lucretian imagery, Pythagoras describes tadpoles transforming into frogs from seeds contained within the mud: *semina limus habet virides generantia ranas, | et generat truncas pedibus* ... 'mud has seeds that beget green frogs, and it begets them without feet' (15.375-76). This description of the tadpoles emerging from the earth and transforming into frogs is a further possible allusion to Lucretius' depiction of the generation of animals from the earth at 5.797ff.²⁶ Following his depiction of the tadpoles, Ovid describes how when a bear cub is born its mother must lick it into shape:

nec catulus, partu quem reddidit ursa recenti,
sed male viva caro est; lambendo mater in artus

²⁵ Barchiesi and Rosati (2006, 292) likewise note the allusion to *DRN* 5.839. The Conclusion (§1) further discusses the comparison between Hermaphroditus in the *Metamorphoses* and the *portenta* of the *DRN*. Diodorus Siculus (4.6.5), similar to Ovid in the *Met.*, describes Hermaphroditus being born from Hermes and Aphrodite, with his double name reflecting his double nature. The textual relationship between Diodorus Siculus and the *Metamorphoses* is discussed below in §4.1.

²⁶ Lucretius also gives numerous accounts of worms emerging spontaneously from the ground at *DRN* 2.871, 899, and 928.

fingit et in formam, quantam capit ipsa, reducit.

And it is not a cub when the female bear has just given birth to it, but it is barely living flesh; by licking it, the mother moulds it into limbs and restores it into shape, like the one she herself holds (15.379-81).

As with the tadpole, the bear cub is born without limbs and its mother must mould it into shape. *fingere* is the same verb which Ovid uses for Prometheus shaping humans from a raw lump of earth at *Met.* 1.83. This would suggest that Ovid is again combining imagery from artistic creation and the development of the living body. Following his description of the bear cub, Pythagoras states that bees are also born without limbs (*sine membris*) but acquire their feet and wings later (15.383-84). Both the imagery and vocabulary which Ovid uses to depict the examples of spontaneous generation given by Pythagoras are highly suggestive of the description of the malformed *portenta* in the *DRN* (5.839-42). This provides another example which appears to indicate that Ovid is alluding to Lucretius' account of the generation of living beings in *DRN* 5.

3.4 Empedoclean Evolution

The accounts of zoogony and spontaneous generation in the *Metamorphoses* and *DRN* can also be compared to Empedocles' description of the evolution of living beings.²⁷ Aetius (5.19.5) recalls that Empedocles said: 'that the first generations of animals and plants were not at all whole, but were disjointed with parts not grown together; and the second generations were like dream images' (Inwood A72a). The first generation is made up of limbs that are separate from each other which sprout up from the earth:

ἦι πολλαὶ μὲν κόρσαι ἀναύχενες ἐβλάστησαν.

²⁷ Campbell (2003, 112) also discusses the arguments which see these truncated bodies of the *portenta* in relation to the Empedocles' description of separated wandering arms in his zoogony (Inwood 64 / DK 57). Gale (2009, 171) states that Lucretius' zoogony is substantially indebted to Empedocles.

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γυμνοὶ δ' ἐπλάζοντο βραχίονες εὐνίδες ὄμων,
ὄμματά τ' οἷ' ἐπλανᾶτο πενητεύοντα μετώπων.

As many heads without necks sprouted up and arms wandered naked, bereft of shoulders, and eyes roamed alone, impoverished of foreheads (Inwood 64/ DK57).²⁸

Censorinus (4.7-8) referring to this passage recalls how Empedocles stated that ‘first single limbs issued from everywhere in the earth – as though it were pregnant – and then came together and produced the stuff of a solid man, being mixed out of fire and water together’ (Inwood A72b).²⁹ In the zoogony of Empedocles, first individual limbs sprout up (βλαστάνω) from the earth which is compared to a pregnant mother, and are produced from a mixture of the elements, before a second generation emerges whose limbs are combined at random.³⁰

Empedocles, Lucretius and Ovid all portray the creation of the first animals as a form of spontaneous generation from the earth; however, each of them also compares the earth to a mother’s womb. The spontaneous generation of these early creatures derives imagery from the sexual reproduction which will occur at a later stage of universal history. Campbell (2003, 107) shows how the image of wandering limbs coming together to form a living being, particularly in Empedocles, simply externalizes what is imagined to occur within the womb when the baby is being formed. In the Hippocratic theory, the embryo is formed by tiny preformed limbs coming

²⁸ Barchiesi (2005, 200) mentions this fragment from Empedocles, as well as fragments 66/61 and 67/62 in relation to Ovid’s zoogony.

²⁹ Censorinus also states here (*De Die Natali* 4.7-8) that Parmenides shared this idea with Empedocles (Gallop 1984, A51).

³⁰ Aristotle in the *Generation of Animals* (722b 21) quotes the above passage from Empedocles before stating that later Empedocles says that these wandering limbs grew together to form the incorrectly blended ‘dream-like’ creatures of the second generation. This second generation will be discussed further in chapter 7.

together from the seed of both parents.³¹ Elsewhere in the *Metamorphoses* as well in the *Ars Amatoria* and *Tristia* we can see Ovid alluding to the second generation of living beings in Empedocles' account of evolution.³² One of the hybrid creatures which emerge in the second generation of dream-like creatures is the hermaphrodite: μεμειγμένα τῆι μὲν ἀπ' ἀνδρῶν τῆι δὲ γυναικοφυῆ σκιεροῖς ἠσκημένα γυίοις 'mixed in one way from men and in another way in female form, outfitted with shadowy limbs' (fr. Inwood 66/ DK 61). This figure can be compared with Ovid's depiction of Hermaphroditus.³³ The third generation are 'whole-natured forms' coming together from the correct blending of elements, while the fourth generation reproduce by themselves, either through sexual reproduction or the condensation of nourishment (Inwood A72a).³⁴

Both Gale (2009) and Campbell (2003) trace numerous correspondences between the zoogonies and the evolution of corporeal forms in Lucretius and Empedocles. The evidence suggests that Lucretius drew heavily from Empedocles' zoogony, while contradicting it at a number of points. For instance Lucretius' inclusion of the hermaphrodite in his depiction of the *portenta* strongly suggests an allusion to Empedocles' figures with both male and female limbs (fr. Inwood 66/ DK 61). Empedocles groups these androgynous figures with the hybrids. Lucretius,

³¹ Campbell (2003, 107): 'this perhaps makes it easier to understand the theory of the original creation by the combination of limbs, since it is analogous to the pangenetic preformationist theory of embryology'. Campbell gives the following examples: Arist. *Gen. An.* 722b 17-30; Aëtius 5.1.8, Hippoc. *Nat. Puer.* 17 (vii.496.19-20). Campbell (2003, 75) also states that 'the theory of wombs growing in the earth is certainly the closest Lucretius comes to Empedocles' hallucinatory early world, where separate limbs and organs wander the earth'.

³² These comparison will be discussed in detail in chapter 7 §3.5.

³³ In the Conclusion (§1), this passage will be compared with Ovid's description of Hermaphroditus: *nam mixta duorum / corpora iunguntur faciesque inducitur / una* 'for the bodies of both having been mixed and were joined together and was brought to one appearance' (*Met.* 4.373-75).

³⁴ This passage continues to extrapolate how certain creatures have certain characteristics based upon the proportional blend of elements: so fish would be more at home in the sea due to having a blend where water predominates, etc.

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however, following on from his depiction of the *portenta* rejects categorically the notion that hybrid creatures could have existed at any point in the history of the universe (5.878-81). Lucretius largely follows the sequence of evolution described by Empedocles, with the fundamental difference that the *portenta* and other creatures in the *DRN* are the result of atomic as opposed to elemental combinations.

We have seen how Ovid is more than likely alluding to Lucretius' depiction of the *portenta* when describing the spontaneous generation of animal life after the flood in book 1 of the *Metamorphoses*. There are, however, a number of aspects of Ovid's zoogony which more closely correspond to that of Empedocles. Ovid's creatures are formed from a mixture of elemental qualities rather than of atoms, and specifically from water and heat. Ovid also uses the phrase *discors concordia* when describing the optimum conditions for spontaneous generation to occur, which as we have seen marks the passage out as Empedoclean. The evidence suggests that Ovid's zoogony after the flood draws material from both Lucretius and Empedocles. This appears to be done in such a way as to construct a *double allusion*, as Ovid alludes to the sections of *DRN* 5 which are themselves responding to Empedocles.

3.4 Bougonia and Georgics 4

The following section will examine how spontaneous generation is connected with bougonia. We have seen how Ovid visualises spontaneous generation using imagery from pregnancy and childbirth. The earth is depicted as a body from which animals emerge. A similar process takes place in bougonia and other forms of regeneration where the body of one animal can emerge from the corpse of another. In book 15 of the *Metamorphoses*, Pythagoras gives a number of examples of this phenomenon, whereby an animal is born from the dead body of another. Pythagoras asks

nonne vides, quaecumque mora fluidoque calore
corpora tabuerint, in parva animalia verti?

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Do you not see that whatever bodies have dissolved over time and in liquid warmth are turned into small animals? (15.362-63)

In this form of generation the putrefying or decaying corpse of one animal provides both the venue and substance from which another animal will be born. This may be read as a corporeal counterpart to metempsychosis, where the soul migrates from one body to another. As in the case for spontaneous generation from the earth, heat and moisture are vital ingredients for the creation of life.

Pythagoras gives a number of examples which usually involve the burial of the corpse of one animal in the earth which gives rise to a multitude of smaller animals: bees are born from the buried body of a bull; a war-horse interred in the ground is the source of the hornet; if you bury the limbless body of a crab, a scorpion emerges. Pythagoras places alongside these, the transformation of larvae into butterflies, the spontaneous generation of frogs from mud, and the mother bear licking her cub into shape (see §3.3 above). Pythagoras then compares these phenomena to the birth of birds from eggs which he deems equally miraculous, before stating that there are those who even believe that the human spine can become a snake after the rest of the body has rotted away (15.361-90). Finally Pythagoras contrasts these accounts, where the body of one animal can give rise to another, with the Phoenix who is able to be reborn from itself (15.391-406). Pythagoras thus describes a process of physical regeneration which does not involve sexual reproduction and which is associated with spontaneous generation.

Pythagoras' first example of physical regeneration is an account of bougonia. He states that when you bury the body of a bull, bees emerge from its carcass: *de putri viscere passim / florilegae nascuntur apes* 'from rotting flesh everywhere flower-gathering bees are born (15.365-66). As we have seen, Ovid later describes how the bees emerge *sine membris corpora* 'as bodies without limbs' and gain their wings and feet later on (15.383-

84).³⁵ The truncated bodies of the bees as they first emerge may be read as an allusion to Empedocles (fr. 64/57 above) and Lucretius (*DRN* 5.839-42 above).

Pythagoras' account of bougonia also closely corresponds to Vergil's depiction of bougonia in the *Georgics*. Vergil describes how the bees first emerge from the putrefying carcass of the bull:

Interea teneris tepefactus in ossibus umor
aestuat et visenda modis animalia miris,
trunca pedum primo, mox et stridentia pennis,
miscentur tenuemque magis magis aëra carpunt.

Meanwhile moisture, made warm in the softened bone, undulates and animals of a type wondrous to behold, first bereft of feet and soon with whirring wings are mixed together and gradually try the thin air (*Georgics* 4.308-11).

The warming of moisture in the carcass of the bull leads to the generation of life in the form of bees. Ovid's depiction of bougonia in *Met.* 15 likewise has warmth and moisture as the key ingredients for the creation of the bees (15.363). Ovid also uses the exact same phrase *trunca pedum* to describe the tadpoles emerging from the mud (15.376), which Vergil uses to describe bees as they arise from the bull. Ovid also places his depiction of spontaneous generation in book 1 of the *Metamorphoses* at the Nile (1.422) which is also the site of Vergil's bougonia (*Georg.* 4.288).³⁶ Campbell (2003, 113), Gale (2000, 230), and Hardie (2009b 51-2) discuss how Vergil's description of the bees as *trunca pedum* 'imitates' Lucretius' use of the term *orba pedum partim* at *DRN* 5.840 when describing the *portenta*. Vergil's depiction of bougonia in the *Georgics* may serve as a further

³⁵ In this way they may also be grouped with the frogs who emerge from the mud as tadpoles without feet (15.376).

³⁶ Diodorus Siculus likewise has the Nile as a setting for his zoogony at 1.7.3. See further §4.4 (below).

intertext from which Ovid may well have been drawing in his account of spontaneous generation in both the speech of Pythagoras and the creation of animals in the zoogony after the flood. The network of textual relations here is considerably complex. It has been argued that Ovid is alluding to Lucretius and through Lucretius to Empedocles. Ovid's familiarity with the *Georgics* need not be questioned; however the correspondences noted above could indicate that Ovid is treating the account of bougonia in *Georgics* 4 in much the same way as he treats Lucretius' zoogony in *DRN* 5, namely he may be encouraging a rereading of the *Georgics* within the context of Empedoclean ideas of reincarnation; however, as both Gale (2000, 230) and Campbell (2003, 113) argue Vergil may not only be looking to Lucretius' *portenta* in his depiction of bougonia but possibly to Empedocles as well.

In the *Fasti* (1.363-82), Ovid gives a more detailed account of bougonia. He tells the story of Aristaeus, whose bees were destroyed by the nymphs who blamed him for the death of Eurydice. Cyrene, Aristaeus' mother, advised him to bind Proteus and ask him how he might recover his bees. Proteus instructs him to slaughter a bullock, bury its body in the earth and bees will be born from the animal's carcass. Myrto Garani (2013, 240-48) discusses the connection between Ovidian bougonia in the *Fasti* and Empedocles. In particular Garani draws on the sympathy displayed by Ovid for both the ox and the sheep, seeing their sacrifice as unnecessary given their benefit to mankind (*Fasti* 1.383-4). Garani goes further, arguing that the idea of many bees emerging from one bull in the *Fasti*, *mille animas una necata dedit* 'one life snuffed out brought to birth a thousand' (1.380) is a deliberate allusion to Empedocles' cyclical universe, and in particular the time in the cycle when Strife takes over as the driving force: τὸτὲ δ' αὖ διέφθ' πλέον' ἐξ ἑνὸς εἶναι 'and at another [time], again, [they] grew apart to be many from one' (Inwood 25.2 / DK 17).³⁷ We have argued that in Ovid's

³⁷ Garani (2013, 247) also points to Empedocles' use of the term βουγενής in the description of the bull-human hybrids (fr. 66/61). Garani states that this is the first known occurrence of the word, which hereafter is used with an altered meaning, referring to the one that is born from an ox. 'In particular it has been used for bees that are born from the carcass of an ox through the process of bougonia'. As will be discussed in the following chapter (§3.5), Ovid frequently alludes to this fragment from Empedocles.

account of the formation of the universe, the primordial mass of *chaos*, where all the elements are combined together into one, must first be separated out into its constituents in order to give rise to the organized universe. This has been interpreted, particularly in relation to the *Fasti* as corresponding to the phase in the cosmic cycle when Strife is dominant and causes the sundering of the primordial mass. Ovid's depiction of bougonia in the *Fasti* could be read in terms of a corporeal representation of universal processes, as the narrative for the cycle of life and reincarnation is mapped upon the cosmos.

4. THE ZOOGONY OF DIODORUS SICULUS

4.1 *How to compare the Metamorphoses and Bibliotheca Historica*

This section will examine a number of correspondences between cosmogony and zoogony of Diodorus Siculus' *Bibliotheca Historica* and that of the *Metamorphoses*, particularly in relation to the depiction of the spontaneous generation of animals. Little attention has been given to seriously questioning whether Diodorus influenced or was read by Ovid or if Ovid alludes to the *Bibliotheca* in the *Metamorphoses*. This section will begin by discussing a number of parallels between the *Metamorphoses* and the *Bibliotheca*. It will consider whether these parallels indicate any direct textual connection between the *Metamorphoses* and the *Bibliotheca*, or if instead Ovid and Diodorus were both drawing from a common source or sources. Given that the composition of the *Bibliotheca* has roughly been dated to between 56 and 30 BC (Sacks 1994, 220), due to the short period of time until the composition of the *Metamorphoses*, the possibility of an intermediary text accounting for the observed parallels will not be considered.

More specifically it will propose that Ovid used the *Bibliotheca* as a model for the sequence of his universal history in book 1 of the *Metamorphoses* up until the myth of ages. It will not argue that Ovid is alluding to the *Bibliotheca*; rather, it will consider the *Bibliotheca* as a possible text which Ovid used for his preliminary work when beginning to write the opening of the *Metamorphoses*. The approach here taken to the

Bibliotheca and its relationship with the *Metamorphoses* will roughly follow the approach which Cameron (2004, 255-303) takes when discussing Ovid's use of mythographic sources and handbooks. These are vital parts of the poet's repertoire, yet not necessarily something he wishes to advertise to his readers. The *Bibliotheca* will thus be treated apart from the type of intertextual discourse, which has so far been identified as a key component of the opening of the *Metamorphoses*. The *Bibliotheca* has until recently been treated as a crudely compiled collection of summaries of passages from previous texts; however, more recently attempts have been made to reassert the originality of the *Bibliotheca*. Without venturing into this debate Diodorus will be afforded the benefit of the doubt as regards the originality of his work, especially given the lack of previous sources needed to qualify the nature of his borrowings.

Wheeler (2002, 187-88) in a detailed analysis of whether the *Metamorphoses* can be read as a universal history containing features of that specific genre makes the following statement in relation to the shared features of the *Metamorphoses* and *Bibliotheca Historica*:

It is difficult to prove that Ovid knew the universal histories of either Diodorus or Trogus, but in the case of Diodorus there are some obvious parallels between the *Bibliotheca Historica* and the *Metamorphoses*. In addition to their comparable chronological span, both works begin in similar ways. Ovid and Diodorus introduce their universal histories with a *diakrisis* type of cosmogony. Both treat zoogony as a process of spontaneous generation from the earth. Both give a list of the kings of Alba to bridge the time between Aeneas and Romulus. Finally Diodorus' treatment of myth concerns itself with cultural benefactors and their apotheosis, looking ahead to the apotheosis of Julius Caesar, which is mentioned several times (1.4.7; 4.19.2; 5.21.2, 25.4; 32.27.1-3). Ovid likewise devotes considerable attention to the apotheosis theme in the later books of his poem and indeed concludes with Julius Caesar's catasterism. All of these

points in common may be coincidental, but they attest to overlapping areas of interest between the *Metamorphoses* and universal history.³⁸

The wealth of parallels that Wheeler observes will be added to shortly, but given these numerous correspondences, it is worth considering why he merely attests these parallels to ‘overlapping areas of interest’ and not to any direct connection between the two texts. Wheeler’s cautious approach may be the result of a general trend in Diodoran scholarship, which up until recently has treated the *Bibliotheca* as having little to no originality of its own, and with its primary value to modern scholarship as a means of accessing the otherwise lost historical texts which Diodorus draws from.³⁹ More recently Rubincam (1987, 1989, 1998), Sacks (1990, 1994), and Sheridan (2010), have emphasised the originality of the *Bibliotheca* and have questioned Diodorus’ presumed adherence to his historic and literary sources. The more creativity we attribute to Diodorus in the *Bibliotheca* and the less we view him as doggedly adhering to source material, the greater the likelihood that the series of parallels which can be identified with the

³⁸ Sacks (1990, 57) also states that Diodorus’ ‘descriptions of the cosmogony and zoogony find striking parallels in contemporary writers, especially Ovid and Lucretius’. Burton (1972 46), however, referring to Spoerri’s *Späthellenistische Berichte über Welt, Kultur und Götter*, states that the similarities between the *Met.* and the *Bibliotheca* are merely coincidental and when Diodorus’ cosmogony is compared with Ovid’s in *Met.* 1 ‘it becomes apparent that both authors are reproducing the thought of their own age’ and specifically ‘have their roots in the δίακρισις cosmogonies which occur no earlier than the 1st century BC, and which have their origins in the revival of Platonism at this time’. The preceding chapters of this work have demonstrated that this statement is certainly not applicable to the *Metamorphoses* as Ovid’s depiction of the primordial universe and cosmogony is a carefully constructed set of allusions to various literary and philosophical texts, some of which, Empedocles in particular, clearly predate the 1st century BC.

³⁹ Rubincam (2009) captures well the division still present in Diodoran scholarship between the older approach founded in *Quellenforschung*, which tends to emphasize the diversity of the work, resulting from its dependency on many different sources and which primarily sees the *Bibliotheca* simply as a means of obtaining these older sources, and the more recent trend which focuses on the significance of Diodorus’ own contribution to the *Bibliotheca*.

Metamorphoses indicate a direct textual correspondence as opposed to the influence of a common source or sources.

The opening book of the *Bibliotheca Historica*, and in particular chapters 6-10, give (a) an account of the creation of the universe, the beginnings of life, and human prehistory, before giving (b) the specific Egyptian account of world and human origins. These chapters from the *Bibliotheca* will be the primary focus of this section. Reinhardt in 1912 was the first to argue that Hecataeus of Abdera was the primary source for the first book of the *Bibliotheca*; Diodorus mentions Hecataeus by name at 46.8; Spoerri discredited Reinhardt's theory positing instead the Stoic and Platonic thought of the first century BC and in particular Posidonius as the primary influence.⁴⁰ Burton (1972, 45) suggested Diodorus had more in common in this section of his text with the Presocratics, particularly Anaximander, Empedocles and Anaxagoras, while also noting Plato's *Timaeus*. Diodorus himself (3.11.2) mentions book 2 of Agatharchides *On Asia*, book 8 of Artemidorus of Ephesus and certain others residing in Egypt as sources for his general depiction of Egypt which follows from his depiction of cosmogony and zoogony.

As Sacks (1994, 215) observes the difficulty in ascribing originality to Diodorus is that the texts which he is believed to be drawing from are fragmentary, if they survive at all: 'because of the long tradition that Diodorus is "a mere copyist", scholars attempting to assert Diodorus' creativity bear the burden of proving the negative'. Sacks (1990, 1994), and Sheridan (2010) have done much to show Diodorus' creative approach to other texts, in the few instances where they are extant and we can compare a passage in the *Bibliotheca* to its source.⁴¹ Rather than adhering to a single source in the opening book of the *Bibliotheca*, the growing perception is that Diodorus was responding to and integrating not one but many texts, while

⁴⁰ This may be seen as an example of pan-Posidonianism, the tendency to find the influence of Posidonius everywhere possible (Sider 2015). This may be attributed to Posidonius' reputation as polymath, the scope of his work, his blend of Stoic and Platonic doctrine and in particular the fragmentary nature of his work.

⁴¹ Sacks (1994, 214-15) demonstrates, in a passage describing Prusias' embassy (31.15.2), Diodorus creatively responding to his source texts Polybius (30.18).

also inputting his own philosophical thought. Unfortunately not enough remains of almost all of the texts, which Diodorus is believed to have drawn from, to make any more concrete assertion.

4.2 Structural Parallels between the Metamorphoses and Bibliotheca

Historica

Before examining any passage of the *Bibliotheca* in detail it is worth giving an overview of the sequence of events which comprise chapters 7-11 of book 1 and how this sequence corresponds with book 1 of the *Metamorphoses*.

Table of Correspondences between the first books of the Bibliotheca and Metamorphoses

Bibliotheca Historica

Metamorphoses

1. Origins of the Cosmos

All things combined in the primordial universe and heaven and earth are indistinguishable (1.7.1).

Chaos has one form and is an unordered mass comprising an indistinguishable mixture of elements (1.5-20).

When the elements are separated from each other, and placed in their correct position, the ordered universe is formed.

The *Deus et melior Natura* separates the elements before binding and placing them in their correct position (1.21-24).

The fiery element takes the highest region, while the heavier mixture of water and earth sinks to the bottom, before the land and sea are distinguished from each other (1.7.2).

The fiery power moves to the highest point, next the air while the earth and heavier particles move to the bottom before the water is separated (1.26-31).

2. The Origin of Humans and Living Beings

The earth is called *πηλώδης* ‘clayey’ and

(a) Prometheus forms humans from

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living beings emerge as a result of a mixture of heat and moisture. Embryos grow inside swelling pustules on the earth and the process is compared to spontaneous generation which is said to still occur today (1.7.4).

earth mixed with rain water (1.82-3). (b) In the zoogony after the flood animals arise from the damp earth when heated. Ovid visualises the earth as pregnant body and the process is compared to spontaneous generation, which still occurs (1.416-21).

The animals' nature and the position they occupy is determined by the ratio of the elements from which they are composed (1.7.5).

The stars and the gods are said to occupy the highest region, the birds the air, the wild beasts the earth, the fish the waves (1.72-75).

The first humans are bestial (1.8.1) and subsequently grow more civilized as language emerges (1.8.4).

The myth of ages, however instead of growing more civilized, each generation is more aggressive and barbaric (1.89-150)

3. The Egyptians' Account of Human Origins

Animals and humans first emerged in Egypt due to the climactic conditions around the Nile floodplain (1.10.1); evidence for this can be seen in the spontaneous generation that still occurs there today (1.10.2).

After the flood and Deucalion's repopulation of the earth, animals are regenerated from the earth; this is compared to spontaneous generation which is said to still occur today in the Nile floodplain (1.416-36).

Mice can be seen emerging in the Nile floodplain with bodies still partially made from earth (1.10.2)

Animals may be seen beneath the Nile floodplain when clods of earth are overturned with bodies that are one half raw earth (1.422-9)

The flood and Deucalion are mentioned and the likelihood that it was the Egyptians who survived since little rain

The account of the flood and Deucalion and Pyrrha's repopulation of the earth after the flood (1.274-

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falls in this country, making them the oldest race. Even if the Egyptians also perished and the entire world was destroyed, life would naturally regenerate first around Egypt (1.10.4).

4. More Scattered Correspondences

The first Egyptian men gaze at the stars (1.11.1).

415) followed by the account of spontaneous generation above.
Humans are given an upright face in order to gaze at the stars (1.85-86).

The sun (Osiris) and the moon (Isis) regulate the universe. These two gods are responsible for the elemental qualities which will form all things, the fiery and the spirit, the wet and dry and the air (1.11.5).

The elemental qualities (instead of elements) form a series of oppositions, hot, cold, wet, dry, soft, hard, heavy, light in the primordial universe (1.17-20)

The universe is compared to a living body with the elements making up its limbs (1.11.6).

The universe is called a *corpus* and is given *membra* via the separation of the elements (1.33).

Not only does this table demonstrate the frequency of parallels between the *Metamorphoses* and *Bibliotheca*, but shows how the structural sequence in the *Bibliotheca* and the *Metamorphoses*, at least as far as the myth of ages, are largely the same. Both begin with an account of the formation of the universe, through the separation of the elements from an initial state of confusion, before the elements are moved to their correct position in space. In the *Bibliotheca* the first living beings emerge from the damp earth when heated, while Prometheus fashions the first humans from earth mixed with rainwater. The animals are then designated their respective positions in space in the *Bibliotheca*, while in the *Metamorphoses* the animals are similarly positioned immediately preceding Prometheus' formation of

humans.⁴² Both texts then include a lengthy account of the ages of man. In the *Bibliotheca* humans grow more civilized as time passes, while in the *Metamorphoses* the reverse occurs as humans tend to grow more aggressive.

The sequence is then somewhat interrupted as Ovid gives a brief account of the Giants and Lycaon with the depravity of mankind ultimately motivating Jupiter to destroy the human race with the flood. Following the ages of man in the *Bibliotheca* there is a break in the narrative, as Diodorus switches to the Egyptian account of the origin of living beings. Diodorus recalls how in the Egyptian account, humans were believed to have originated from the land around the Nile and uses the spontaneous generation, which he states still occurs there today, as evidence for the primacy of Egypt. He then mentions the flood which occurred at the time of Deucalion. He states that it is likely that the Egyptians managed to survive the flood as little rain falls there, or, even if the destruction of living things was complete, as some maintain, it is probable that life regenerated in Egypt, given the ideal climactic conditions.⁴³ Ovid gives a far more detailed treatment of the flood narrative but appears to pick up the sequence again when describing the zoogony after the flood, which he compares to spontaneous generation that is said to still occur today in the Nile floodplain. The texts then diverge as Diodorus continues his account of Egypt, while Ovid begins his series of narratives of the erotic pursuits of the gods with the story of Daphne and Apollo.

We have seen that Ovid's depiction of the formation of the universe, the generation of humans, the flood, and subsequent anthropogony and zoogony contain a complex array of specific allusions to different texts;

⁴² Diodorus compares the cosmogony which he sets out at the beginning of the *Bibliotheca* with that recounted in Euripides' *Melanippe* which he quotes at 1.7.7. In chapter 3 (§2.2) we compared this fr. (484 Collard) of the *Melanippe* with the cosmogony of *Met.* 1.

⁴³ This comparable to the beginning of the *Timaeus*. We have seen in chapter 4 §4.1 that at the beginning of the *Timaeus*, Critias recounts Solon's journey to Egypt where he obtained knowledge about the history of the world and mankind from the Egyptian high priest. Solon is informed that the history of the world is far older than the Greeks realise and has undergone numerous phases of destruction through both fire and water in the forms of conflagrations and floods.

there is evidence here that suggests that for the general sequencing of the opening of the *Metamorphoses* Ovid is following the beginning of the *Bibliotheca*. More specifically, it is precisely the section of the *Metamorphoses* that most readily corresponds to the genre of universal history, which appears to follow the sequence of the *Bibliotheca*, describing the creation of the universe, and the generation of humans and animals. Without necessarily viewing the *Bibliotheca* in terms of the explicit intertextual agenda of the opening of the *Metamorphoses*, it is probable that the *Bibliotheca* provided a general model for Ovid on how to write and sequence a universal history.

4.3 Writing a Universal History

Wheeler (2002, 166-67) also observes a further correspondence between the *Bibliotheca* and the *Metamorphoses*. Diodorus describes what he sets out to achieve in the *Bibliotheca* in the preface, stating that his text is unique in attempting to write a universal history spanning from the beginning of the time down to his very own day:

οἱ πλεῖστοι μὲν ἐνὸς ἔθνους ἢ μιᾶς πόλεως αὐτοτελεῖς πολέμους ἀνέγραψαν, ὀλίγοι δ' ἀπὸ τῶν ἀρχαίων χρόνων ἀρξάμενοι τὰς κοινὰς πράξεις ἐπεχείρησαν ἀναγράφειν μέχρι τῶν καθ' αὐτοὺς καιρῶν.⁴⁴

While most have written either about one people or one city and its independent wars, few have attempted to write a universal history, beginning from the beginning of time going even as far as their own day (1.3.2, tr. adapted Oldfather 1933).

Sheridan (2010, 42) emphasizes how Diodorus is one of the first if not the first to set himself such a task in attempting to encapsulate the entire history of the world in his text. Wheeler compares this to the proem of the *Metamorphoses*, where Ovid asks the gods to inspire his work *primaque ab origine mundi / ad mea perpetuum deducite tempora carmen* ‘and from the

⁴⁴ All displayed quotations from the *Bibliotheca Historica* follow the 1985 revised edition of Vogel’s Teubner.

first creation of the world, draw down my continuous song to these times’ (*Met.* 1.3-4). Ovid sets the same agenda for the *Metamorphoses* as Diodorus in the preface to the *Bibliotheca*. Wheeler uses this correspondence as a means of further reading the *Metamorphoses* as a form of universal history, comprising the three primary phases, which include cosmic and human origins (*Met.* 1.4-451), mythological narratives of the distant past (1.452-11.193), and historical events leading up to contemporary times (11.194-15.870).⁴⁵

4.4 Zoogony and Spontaneous Generation in the Nile Floodplain

The numerous parallels between the *Metamorphoses* and *Bibliotheca Historica* suggest a strong structural connection between the two texts; however, it is arguably Diodorus’ depiction of zoogony and the spontaneous generation of animals where we see the closest correspondence between the *Metamorphoses* and the *Bibliotheca*. After the creation of the universe, Diodorus describes the formation of living beings. In the early history of the world, the land of the earth is described as ἀπαλή ‘soft’, and πηλώδη, ‘clay-like’ (1.7.3.1). As the sun shines on the soft earth, the warmth causes lumps to emerge on its surface:

ἔπειτα διὰ τὴν θερμασίαν ἀναζυμουμένης τῆς ἐπιφανείας συνοιδῆσαι
τινα τῶν ὑγρῶν κατὰ πολλοὺς τόπους, καὶ γενέσθαι περὶ αὐτὰ
σηπεδόνας ὑμέσι λεπτοῖς περιεχομένας·

Then, because of the warmth, as the surface was rising, some of the moist substances swelled in many places, and about these places pustules emerged surrounded by thin membranes (1.7.3.2).

⁴⁵ Wheeler (2002, 163, 180) also compares the preface of Dionysius of Halicarnassus’ *Roman Antiquities* (1.8.1), where Dionysius says he will begin his history from the beginning of the oldest myths down to the beginning of the first Punic war, as well as Trogus’ ‘synchronic narrative weaving’ in the *Historiae Philippicae* where the chronological sequence of the narrative is relaxed, allowing the author to jump geographically following coincidental events which occur in different parts of the world.

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Diodorus shows how earth water and heat are the ingredients needed for the creation of life, as womb-like structures are seen swelling up from the earth, from which animals will emerge.⁴⁶ In the *Metamorphoses* the animals are similarly formed when the sun warms the lingering moisture in the earth, and the earth is said to swell up (*intumescere*) and is compared to a mother's womb (*Met.* 1.416-21 above).

Diodorus continues to describe how every form of animal emerges from these pustules:

τὸ δ' ἔσχατον τῶν κυοφορουμένων τὴν τελείαν αὔξησιν λαβόντων,
καὶ τῶν ὑμένων διακαυθέντων τε καὶ περιπραγέντων, ἀναφυῆναι
παντοδαποὺς τύπους ζώων.

And at the end of the pregnancy, perfect young were attained and the membranes burnt through and broken, every type of impression of animals were produced (1.7.4-5, tr. adapted Oldfather 1933).

This visceral image of the animals breaking through the surface of the membranes again recalls the imagery of childbirth as Diodorus refers to the earth as pregnant; however, a τύπος 'impression' also suggests imagery of artistic creation, and in particular the stamping of a form into clay. In the *Protagoras*, Plato uses the same term when describing mortal creatures, created from a mixture of elements in the earth: τυποῦσιν αὐτὰ θεοὶ γῆς ἔνδον ἐκ γῆς καὶ πυρὸς μείξαντες καὶ τῶν ὅσα πυρὶ καὶ γῆ κεράννυται 'the gods made them by impression within the earth, having mixed them from earth and fire and all things mixed with fire and earth' (320d 2-3, tr. Arieti and Barrus 2010).⁴⁷ We have seen in numerous instances how the creation of humans or animals is compared to a potter forming a figure from clay. Diodorus's description of the emergence of the creatures, and particularly the

⁴⁶ For a comparison with the Lucretius' description of the wombs which shoot up on the surface of the earth, see the Excursus below.

⁴⁷ Aristotle *On Memory and Reminiscence* (450b) uses τύπος for the formation of images in the mind.

image of the membranes being burnt and broken through may even recall imagery of casting and how for example a bronze statue would be revealed by cracking open a hardened clay mould.⁴⁸ We have seen in the *Metamorphoses*, Ovid makes frequent use of the imagery of artistic creation when describing how humans in particular are formed, moulded like clay statues by Prometheus (1.82-83) and like forms revealed in marble by the sculptor in the anthropogony after the flood (1.405-6).

Diodorus' description of the animals which emerge from the earth during the process of spontaneous generation presents the strongest evidence for Ovid drawing material directly from the *Bibliotheca*. Diodorus gives two descriptions of spontaneous generation: the first (above) occurs directly after the opening cosmogony (1.7); the second is part of the Egyptian account of the creation of living beings (1.10). In the Egyptian account, the Nile is the setting for the origin of life:

τῆς δ' ἐξ ἀρχῆς παρ' αὐτοῖς ζωογονίας τεκμήριον πειρῶνται φέρειν τὸ καὶ νῦν ἔτι τὴν ἐν Θηβαΐδι χώραν κατὰ τινὰς καιροὺς τοσοῦτους καὶ τηλικούτους μῦς γεννᾶν ὥστε τοὺς ἰδόντας τὸ γινόμενον ἐκπλήττεσθαι· ἐνίους γὰρ αὐτῶν ἕως μὲν τοῦ στήθους καὶ τῶν ἐμπροσθίων ποδῶν διατετυπῶσθαι καὶ κίνησιν λαμβάνειν, τὸ δὲ λοιπὸν τοῦ σώματος ἔχειν ἀδιατύπωτον, μενούσης ἔτι κατὰ φύσιν τῆς βόλου.

That the origin of animal life happened among them [the Egyptians], they give as evidence the fact that still today the land in Egypt at certain times generates mice of great size and numbers, so that those who have seen them born are astonished; for some of them are fully formed as far as the breast and front feet and are able to move, while the rest of the body is unformed, still having the nature of a clod of earth (1.10.2.1-3.1, tr. adapted Oldfather 1933).

⁴⁸ Pliny (*NH* 35.44) and Pausanias (8.14.8) briefly mention the process of casting statues, while a 5th century BC Kylix, the 'Berlin Foundry Cup' appears to show the casting of bronze statues.

Diodorus describes how the land of Egypt even in his own time could produce animals such as mice through spontaneous generation. He states that during their spontaneous generation the mice can sometimes be seen only half formed, with part of their bodies still being raw earth. He then describes how this takes place when the Nile recedes and explains how this is the origin of animal life:

καὶ γὰρ ἐν τοῖς καθ' ἡμᾶς ἔτι χρόνοις κατὰ τὴν ἐπίκλυστον Αἴγυπτον ἐν τοῖς ὀπίμοις τῶν ὑδάτων φανερώς ὀρᾶσθαι γεννωμένας φύσεις ἐμψύχων· ὅταν γὰρ τοῦ ποταμοῦ τὴν ἀναχώρησιν ποιουμένου τὴν πρώτην τῆς ἰλύος ὁ ἥλιος διαξηράνη, φασὶ συνίστασθαι ζῶα, τινὰ μὲν εἰς τέλος ἀπηρτισμένα, τινὰ δὲ ἡμιτελῆ καὶ πρὸς αὐτῇ συμφυῆ τῇ γῆ.

For still even in our time, after the flooding of the Nile, in the slow receding water, visibly the origins of animal life can be seen; for whenever the river first starts receding and the sun has dried up the mud, bodies they say combine, some fully completed, while some only half-finished and united with the earth (1.10.6-7, tr. adapted Oldfather 1933).

In the first instance Diodorus describes how the land of Egypt even today can produce mice; when the mice are born from the earth, half of their bodies are fully formed, while half their bodies are still raw earth as far as the chest and front feet and have the nature of a clod of earth. In the second instance Diodorus further links the spontaneous generation observable today with that of the first creation of animals and describes how unspecified animals can be seen emerging from the Nile floodplain when the river recedes. Some of these are fully formed, while some are only half complete, being still connected to the earth.

In the *Metamorphoses*, Ovid also chooses the Nile floodplain as his venue for his illustration of spontaneous generation. He compares the

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spontaneous generation which he says can still be observed there with that which occurred after the flood. He likewise describes the animals which emerge as not fully formed:

plurima cultores versis animalia glaebis
inveniunt et in his quaedam modo coepta per ipsum
nascendi spatium, quaedam imperfecta suisque
trunca vident numeris, et eodem in corpore saepe
altera pars vivit, rudis est pars altera tellus.

The farmers, as they turn the clods, find many animals; and they see among them some complete and at the very point of birth, some only just begun, stunted and without their limbs, and often in the same body one part is alive and the other part is rough earth (1.425-31)

Ovid describes how, upon overturning the earth of the Nile floodplain, many animals can be seen, which are not fully formed, with part of their bodies being alive while part of their bodies remaining raw earth. Ovid's description of the partially formed creatures beneath the Nile floodplain is remarkably similar to how Diodorus depicts mice and other animals in the *Bibliotheca*, which are likewise partially composed of earth and not fully formed. Up until now we have observed the general structural similarity between the *Bibliotheca* and the *Metamorphoses*; we now have good grounds for arguing that Ovid is drawing more specifically from a passage from Diodorus. Along with the half formed nature of the animals, they are also composed through the same process, when the sun warms the moisture in the soil; the setting of the Nile is the same in both texts and both texts also point to the flood of Deucalion; both Ovid and Diodorus also blend imagery from childbirth and artistic creation when describing the process of spontaneous generation. If Ovid is not drawing from or alluding to the *Bibliotheca*, then he is referring to its immediate or proximate source. However, given the structural correspondences which can be observed between both texts, as well as the claim by both Diodorus and Ovid that

their texts will be universal histories, it appears most likely that Ovid is drawing directly from Diodorus as opposed to an earlier independent text.

CONCLUSION

This chapter has sought to analyze Ovid's depiction of anthropogony and zoogony in *Metamorphoses* 1. It has shown further potential allusions to Plato's *Timaeus* and Cicero's *de Natura Deorum* and *Tusculan Disputations* in the account of the formation of animals and humans after the formation of the universe. It has also shown that particularly in the spontaneous generation of animals after the flood, Ovid constructs a complex series of allusion to Lucretius, Vergil, and Empedocles. If we include Diodorus Siculus in this set of allusions, we not only find a further text which Ovid may be drawing upon, but we find a potential model upon which Ovid could have structured the opening book of the *Metamorphoses*. When taken in conjunction with the evidence supplied in the previous chapters, this complex set of allusions further indicates Ovid's technique of continually shifting between different modes of discourse. To pursue the metatextual approach suggested at the corresponding point in each previous chapter, we could also compare the way in which Ovid forms the text through blending universal history, mythological narrative, scientific and philosophical discourse and didactic poetry with the way in which living beings are likewise composed from a complex set of continually changing elements.

EXCURSUS 5: LIFE GIVING BUBBLES IN ARISTOTLE AND THEOPHRASTUS

This excursus will present a number of other depictions of spontaneous generation, which may in some degree stand in the background of the accounts of spontaneous generation in the *Metamorphoses* and the *Bibliotheca*. It will briefly examine passages in Lucretius' *DRN*, Theophrastus' *De Causis Plantarum*, Aristotle's *Generation of Animals* and Empedocles. And it will consider a number of correspondences in the accounts of spontaneous generation given in these texts and that given in the *Bibliotheca*. It will also consider whether these correspondences may be used as evidence against the argument that Ovid is drawing from or alluding

to one of the sources of Diodorus' depiction of spontaneous generation. Considering the source or influence for Diodorus' depiction of spontaneous generation could also strengthen the argument that Ovid is drawing from Diodorus, if the features of correspondence in the *Metamorphoses* cannot be traced to a source text for the *Bibliotheca*.

The imagery in the *Bibliotheca* of pustules emerging from the surface of the earth during the process of spontaneous generation is also very similar to Lucretius' description of wombs shooting up on the surface of the earth, attached by roots at *DRN* 5.808 (above). The composition of the *DRN* and *Bibliotheca* roughly correspond, with the wide range for the composition of the *Bibliotheca* (56-30 BC) allowing for either text to have influenced the other depending on how we precisely fix the date of the *Bibliotheca*.⁴⁹ Diodorus uses the verb ἀναζυμώω at 1.7.3 (above) to describe how the surface of the earth rises up into pustules during spontaneous generation. Given that the animals will emerge from these pustules and that Diodorus refers to the earth as pregnant (κυφορεῖν) at 1.7.4., there is no doubt that Diodorus is using imagery from childbirth to depict spontaneous generation. ἀναζυμώω can mean 'to rise as in leaven bread' and here suggests the earth growing into lumps like a bread dough rising.⁵⁰ Theophrastus uses the same word in a similar context in *De Causis Plantarum* where he describes how snow in winter is beneficial to producing crops in the spring and summer, as it encloses and instills heat in the earth and causes it to rise:

Ἀγαθὸν δὲ καὶ ἡ χιῶν ὅτι ἀναζυμοῖ καὶ μανοῖ τὴν γῆν καὶ τροφήν τε παρέχει καὶ ἐγκατακλείουσα τὸ θερμὸν αὔξει τε καὶ ἰσχύειν ποιεῖ τὴν ῥίζαν.

⁴⁹ The *DRN* was traditionally believed to have been written by Lucretius before 54 BC (when Cicero makes reference to the *Lucreti poemata* in the *QFr.* 2.10.3) and with the year of Lucretius' death attested to be either 55 (Donatus *Vit. Verg.* 6) or 50/51 (Jerome *Chron.* OI. 171.3). More recently Hutchinson (2001) has contested the date of for the composition of the *DRN* placing it in or after 49 BC.

⁵⁰ ἀναζυμώω can also mean to ferment; the imagery of the swelling of muddy earth, however, suggests the rising of dough.

Snow too is good because it leavens and loosens the earth and it also pours in nourishment and by enclosing the heat gives the root strength and makes it grow (3.23.4.1, ed. and tr. adapted Einarson and Link 1976).⁵¹

The snow breaks up the earth, giving it a loose open texture, while also causing the earth to expand and give nourishment to the crops which will grow from it. The enclosure of the heat within the earth, also suggests the mixture of elements needed to produce life.

σηπεδών, the word which Diodorus uses to designate the lumps which rise up from the earth and out of which the animals will emerge is generally used in relation to rotting flesh and fruit or putrefaction. σηπεδών is derived from the verb σήπομαι, usually used for something rotting. Aristotle in the *Generation of Animals* uses the related noun σήψις, also derived from σήπομαι, which when mixed with rainwater causes spontaneous generation to occur (3.11, 762a10); the animal takes form from the residue produced by the reaction taking place in the earth. σήψις which again is often used for something rotting or decaying is also used of fermentation. The bubbling which accompanies fermentation and indeed the expansion which takes place in the leavening of bread, or the ripening of a piece of fruit would appear to be closer to Diodorus' use of σηπεδών, and allow it to be read as something akin to a womb.

Aristotle continues to say that in spontaneous generation, it is the mixture of *pneuma*, water, earth and heat which gives rise to living creatures, before comparing how animals emerge from the earth as if from a bubble:

Γίνονται δ' ἐν γῆ καὶ ἐν ὑγρῷ τὰ ζῷα καὶ τὰ φυτὰ διὰ τὸ ἐν γῆ μὲν ὕδωρ ὑπάρχειν ἐν δ' ὕδατι πνεῦμα, ἐν δὲ τούτῳ παντὶ θερμότητα ψυχικὴν, ὥστε τρόπον τινὰ πάντα ψυχῆς εἶναι πλήρη· διὸ συνίσταται

⁵¹ Theophrastus uses the same imagery at *Caus. Pl.* 2.1.3.12.

ταχέως ὁπότεν ἐμπεριληφθῆ. ἐμπεριλαμβάνεται δὲ καὶ γίγνεται
θερμαινομένων τῶν σωματικῶν ὑγρῶν οἷον ἀφρώδης πομφόλυξ.

Animals and plants come into being in the earth and water because water has its beginning in earth and pneuma in water, and in this there is all vital heat, and so all things with some form are full of spirit. Therefore they are combined whenever they are encompassed. When they are encompassed, they come into being from the heat of bodily liquid like a foamy bubble (3.11, 762a20-25, ed. and tr. adapted Peck 1943).

The imagery which Aristotle uses is clearly related to pregnancy as the body of the animal is encompassed beneath the surface of the earth and receives nourishment from the heat and moisture retained within the earth. The bubble also suggests the image of the womb.

It would appear likely that Theophrastus is drawing upon Aristotle's description of spontaneous generation in his depiction of the necessary conditions needed to produce plants from the earth (above). In his *Metaphysics* (or *On First Principles*), Theophrastus says that if we imagine the universe to be ordered, then it is necessary for all things within it, even those produced by spontaneous generation to likewise be ordered: καὶ ἐν ζώοις καὶ φυτοῖς καὶ ἐν αὐτῇ πομφόλυγι 'both in animals and in plants, even in the very bubble' (7a22, ed. and tr. Gutas 2010).⁵² It is possible that the πομφόλυγες 'bubbles' which encompass the animals in spontaneous generation described by Aristotle and Theophrastus influenced Diodorus' description of the pustule-like structures, σηπεδόνες, emerging from the earth. Theophrastus' description of the bubbles may also lie behind Lucretius' description of the wombs rising from the earth, which also blend the processes of plant and animal generation; in spontaneous generation animals essentially behave like plants, sprouting from the earth and in the case of the *DRN* remaining fixed via roots.

⁵² Gutas (2010, 133) notes the allusion to Aristotle's *Gen. An.* 762a20-25

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Empedocles also appears to use σήπομαι when describing spontaneous generation (fr. 81/81 Inwood /DK): οἶνος ἀπὸ φλοιοῦ πέλεται σαπέν ἐν ξύλῳ ὕδωρ, which Inwood translates as: ‘wine is water from the skin, rotted in wood’. The context appears to be an account of spontaneous generation and the mixing of elements. fr. 79/79 describes the first tall trees laying olive eggs, while 74/71 gives an account of the mixing of elements remarkably similar to Diodorus Siculus in 1.7. It would make more sense if fr. 81/81 then read: ‘wine is water from the skin impregnated or fermented in wood’.

The above passages provide further examples of spontaneous generation and imagery of womb like structures in scientific texts from the period of Greek thought that appears to inform the zoogonies of Diodorus, Lucretius and Ovid. In particular the passages from Theophrastus and Aristotle are likely sources for Diodorus’ description of the animals emerging from the swelling pustules. The passages from Theophrastus and Aristotle could also be considered as sources for Lucretius’ description of the sprouting wombs in the *DRN*. Ovid’s description of the half-formed bodies beneath the Nile floodplain appears to more closely resemble Diodorus’ description of the zoogony in the *Bibliotheca*. If Theophrastus and / or Aristotle are the sources for Diodorus’ zoogony and if we follow the argument that Ovid’s zoogony more closely resembles that of Diodorus than his source texts, this strengthens the likelihood that Ovid is drawing material directly from the *Bibliotheca Historica*.

Chapter 7: Hybridity

1. INTRODUCTION: APOLLONIUS' BEASTS OF CIRCE

The previous chapter demonstrated that Ovid's depiction of the anthropogony and zoogony after the flood contains a complex set of allusions to other texts. The description of the malformed creatures and the *nova monstra* which emerged from beneath the Nile floodplain (*Met.* 1.422-37) was shown to contain allusions to the *portenta* and failed creatures of the early universe in *DRN* 5 (837-44) and the second generation of hybrid like creatures in Empedocles (fr. 66/61). Damien Nelis (2009) argues that in this section of the *Metamorphoses*, depicting the zoogony after the flood, Ovid also alludes to Apollonius Rhodius' depiction of the beasts of Circe in the *Argonautica*. In book 4 of the *Argonautica*, Apollonius describes the beasts of Circe as being neither like men, nor like animals but instead composed from a mixture of limbs, like the creatures which emerged from the mud in the early history of the universe:

τοίους καὶ προτέρους ἐξ ἰλύος ἐβλάστησε
χθῶν αὐτῇ μικτοῖσιν ἀρηρεμένους μελέεσσιν,
οὐ πῶ διψαλέῳ μάλ' ὑπ' ἠέρι πιληθεῖσα
οὐδέ πῶ ἀζαλέοιο βολαῖς τόσον ἠελίοιο
ἱκμάδας αἰνουμένου·

Similar to these were the creatures which in earlier times the earth itself had created out of mud, pieced together from a jumble of limbs, before it had been properly solidified by the thirsty air or the rays of the parching sun had eliminated sufficient moisture (4.676-80, tr. Hunter 1993).

Not only is Apollonius comparing the beasts of Circe to the monstrous creatures which emerged in the early history of the universe but, as Nelis (2009, 253-55) argues, he is specifically recalling both *Odyssey* 10 and

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Empedocles' depiction of the apparition-like creatures, which emerged in the second generation (fr. 66/61).¹ In particular it is the image of Circe's creatures being formed from the coming together of a mixture of limbs (μικτὰ μέλεα) that recalls the first and second generation of animals and plants in the early stages of the Empedoclean zoogony.²

It may be argued that Ovid alludes to this passage from the *Argonautica* at *Met.* 1.416-21 in his description of the regeneration of animal life after the flood:

percaluit solis caenumque udaeque paludes
intumuere aestu fecundaque semina rerum,
vivaci nutrita solo ceu matris in alvo,
creverunt faciemque aliquam cepere morando.

The earth produced of its own will the other animals, in their various forms, when the lingering moisture had been warmed by the sun's fire, and the mud and the damp marshes had swelled up in the heat, and the fertile seeds of things nourished in the life-supporting earth, as if in a mother's womb, waited and grew and took on a particular likeness.³

Nelis (2009, 263, n.51) identifies a number of correspondences between these two passages, as Ovid like Apollonius describes how animals arise from the mud when sun warms the damp marshes: both Apollonius and

¹ Nelis (2009, 254) states that it is 'well recognized in the scholarship on the *Argonautica* that these creatures resemble the bizarre life forms described by Empedocles, strange forms from an early stage in the processes of creation, when strange hybrids came to life only to disappear, being unable to survive'. Nelis compare the following fragments from Empedocles: Inwood A72a, and 64, 61/59, CTXT 51/60, with *Arg.* 4.676-80.

² For a discussion of the different stages of generation in Empedocles' account of the development of living creatures, see chapter 6 §3.4.

³ The passage from the *Metamorphoses* is treated in detail in chapter 6 (§3.2). In order to more easily identify the correspondences with the *Argonautica*, this passage is displayed again here.

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Ovid refer to the creatures emerging from the mud (ἰλύς, *caenum*, *limus*); both mention the parching sun and the warming of moisture (ἰκμάς, *umor*); and both state how the generation of these creatures is based on ancient forms, which give rise to different species.

Apollonius' depiction of the beasts of Circe in the *Argonautica* problematizes the difference between metamorphosis and hybridity. On the one hand these creatures are humans which have undergone metamorphosis, while on the other hand they are still a mixture of human and beast, as they retain a human psychological identity although trapped inside the body of an animal. Apollonius is depicting the metamorphosis of these creatures as a form of evolutionary retrogression, as their transformation may be read as a return to the monstrous apparitions which appeared in the early stages of Empedocles' description of the development of living beings. More widely, Apollonius' depiction of the beasts of Circe may provide an antecedent for Ovid's problematization of mind-body dualism in the *Metamorphoses* and the slippery distinction he makes between metamorphosis and hybridity.⁴ Apollonius also draws from both mythological and scientific sources, as he reframes the depiction of the beasts of Circe from *Odyssey* 10, in the light of Empedoclean physics.⁵ We have seen Ovid engaged in precisely this

⁴ Nelis concludes by stating that Ovid's depiction of the zoogony is a 'double-allusion' to both Apollonius and Empedocles, describing *Met.* 1.416-36 'as a good example of an Empedoclean epos' (2009, 262). Hardie (2009b, 141) also compares *Arg.* 4.672-80 with Empedocles (in particular Inwood 64 / DK 57) as well as noting how Apollonius draws on Empedocles elsewhere, most notably in Orpheus' song on the origin of the universe at *Arg.* 1.497-511, which as we have seen Ovid also alludes to at the beginning of the *Metamorphoses* (chapter 3 §2.2). Hardie (2009b 141) also notes how the Empedoclean monsters with randomly joined limbs 'has an affinity with the unpredictability of the Ovidian world of *Metamorphoses*'. Hardie has of course demonstrated Ovid's extended use of Empedocles elsewhere, particularly in the speech of Pythagoras (1995 and 2009a 136-152).

⁵ The beasts of Circe are described as follows in *Odyssey* 10 (239-40): οἱ δὲ σωῶν μὲν ἔχον κεφαλὰς φωνὴν τε τρίχας τε καὶ δέμας, αὐτὰρ νοῦς ἦν ἔμπεδος ὡς τὸ πάρος περ. 'Now they had the heads, voice, bristles and the bodily shape of pigs, but their minds remained unchanged as before'. Clarke (1999, 117-18) uses this passage to show how Homeric

endeavor in the previous chapter, as he mixes world history, atomic physics, philosophical discourse and mythological narrative in his depiction of the zoogony and anthropogony after the flood.

This chapter will analyze Ovid's depiction of hybridity, both in terms of corporeal form and textual allusion. It will show that by including hybrids in the *Metamorphoses*, Ovid allows creatures from the primeval past described by the physicists to inhabit the much less remote pseudo-mythological past of historical time. The argument of this chapter will also move specifically towards a metatextual level, suggesting that Ovid uses hybridity as a means of comparing the form and content of the text. It will also consider how the composition of these creatures from a blend of disparate limbs mirrors the composition of the text from a variety of different sources and genres. It will begin with a discussion of Ovid's catalogue of monstrous hybrids from *Tristia* 4.7. It will analyze how Ovid uses this catalogue to generate further reflections on the presence of similar hybrids in the *Metamorphoses*, as well as constructing further allusions to Vergil, Horace, Lucretius and Empedocles. It will also include an examination of one of Ovid's more obscure hybrids, the snake-footed Giants which appear both in *Tristia* 4.7 and *Met.* 1, and it will consider the significance of the lack of literary sources for this creature, while attempting to trace this hybrid to one of Empedocles' compound creatures. Finally it will analyze how Ovid uses compound adjectives to describe compound creatures and how this provides a means of reading hybridity both in terms of the form and content of the text.

2. THE CATALOGUE OF HYBRIDS

2.1 *The Catalogue of Hybrids in Tristia 4.7*

In *Tristia* 4.7, Ovid writes a mild rebuke to an anonymous friend for failing to send him a letter since being exiled to Tomis. He says that he would sooner believe that a whole host of hybrid monsters existed in the past, than

language 'does not reflect a distinction between body and not-body in the make-up of the living man'.

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that his friend has stopped loving him. The description of these hybrid monsters is important for our study of Ovid's depiction of the early history of the universe, because it generates a further set of allusions which cause us to reinterpret the hybrids of myth in relation to the compound creatures of scientific discourse. Ovid catalogues these hybrid monsters as follows:

credam prius ora Medusae
Gorgonis anguineis cincta fuisse comis,
esse canes utero sub virginis, esse Chimaeram,
a truce quae flammis separet angue leam,
quadrupesque hominis cum pectorepectora iunctos,
tergeminumque virum tergeminumque canem,
Sphingaque et Harpyias serpentipedesque Gigantas,
centimanumque Gyen⁶ semibovemque virum.

I would sooner believe that the Gorgon Medusa's face existed, crowned with snaky hair, that there is a maiden with dogs below her womb, that there is a Chimera, formed of a lioness and fierce snake separated by fire, that there are four-footed creatures whose breasts are joined with the breasts of men, and a triple-formed man and triple-formed dog, the Sphinx and Harpies and snake-footed giants, hundred-handed Gyas and a half-bull man (Tristia 4.7.11-18, tr. adapted Wheeler 1996).

These hybrid monsters all appear at some time or other in the *Metamorphoses*: Medusa at 4.653ff.; the Chimera at 9.647; the Sphinx at 7.759-6; the Harpies at 7.4; and the snake-footed and hundred-handed Giants at 1.183-84. The other figures are conventionally taken to be the

⁶ While ambiguity remains over the spelling of his name (Gyes / Gyas / Gyges), there is no doubt that Ovid is referring to one the three hundred-handers, the other two being Kottos and Briareos. Both the forms *Gyen* and *Gyan* exist in the manuscript tradition of the *Tristia*. We have similar problems at *Amores* 2.1.12 between *Gyes* and *Gyas*, while *Gyges* is the form at *Fasti* 4.593. Kenney's OCT edition of the *Amores* lists 7 different proposed readings for 2.1.12.

Scylla (the maiden with dogs below her womb) who appears at *Met.* 14.51 ff.; the centaurs (the four-footed creatures) who appear at *Met.* 12.210ff.; Geryon (the triple-formed man) and Cerberus (triple-formed dog) who appear at 9.184-85; and the minotaur (the half-bull man) who appears at *Met.* 8.131 ff.; while the phrase *semibovem virum* appears in the *Ars Amatoria* (2.24). This phrase in particular points to the connection between this passage and Ovid's previous work, due the intertextual significance of *semibovem virum*, which also marks the Empedoclean undertones in this section.⁷ This catalogue of monsters or hybrids from *Tristia* 4.7 can be read in terms of an implicit response to the *Metamorphoses*, and in particular the compound creatures synonymous with the primeval past; it thus has a significant bearing on understanding Ovid's conception of this phase of the history of the world, while it also introduces a number of further textual allusions. The fact that Ovid appears to deny the existence of these creatures in *Tristia* 4.7, while they are clearly part of the pseudo-history of the *Metamorphoses*, may in itself point to the arguments from scientific literature as to whether such creatures can exist in any phase of the development of living beings.

2.2 The Comparison with Lucretius' Impossible Hybrids at DRN 5.878-924

As we have seen in Lucretius' depiction of zoogony in *DRN* 5 (837-44), the *portenta*, the monstrous malformations including hermaphrodites, emerged from the earth in the early phase of world history, but ultimately failed to reproduce due to their inability to adapt to their environment.⁸ Lucretius follows this by saying that there is another group of monstrous creatures which never existed to begin with, even in this early phase of the evolution of living beings. These impossible creatures are the hybrids:

⁷ The elder Seneca (*Controv.* 2.2.12) discussing Ovid's rhetorical talent recalls the anecdote that some of Ovid's friends had agreed with the poet to select three verses from his work which should be eliminated for reason of taste; while Ovid was to choose three verses he liked the most. The verses chosen were the same and the first of which was *semibovemque virum semivirumque bovem* from *Ars Am.* 2.24. For a further discussion of this passage from Seneca, see Auhagen (2007, 415).

⁸ This passage from *DRN* 5 is discussed in chapter 6 §3.3.

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ne forte ex homine et veterino semine equorum
confieri credas Centauros posse neque esse,
aut rabidis canibus succinctas semimarinis
corporibus Scyllas et cetera de genere horum,
inter se quorum discordia membra videmus; ...

In case, by chance, you believe that Centaurs can come into being and be put together from the seed of a human and a draft horse or Scyllas with bodies half in the sea and girdled with raging dogs, or any others from that generation, whose limbs we see in discord with each other ... (5.890-94 tr. adapted Gale 2009).

Similar to *Tristia* 4.7, Lucretius denies the credibility of the existence of the Centaurs and Scyllas and any other such hybrids. He illustrates how the incompatibility of their body parts reflects the incompatibility of their behaviors, desires, development and atomic structure. Not only are the bodies of the man and horse incompatible, but the seed (*semen*) which makes the horse a draft animal is also incompatible with the seed of a human.⁹ Scylla is not just divided into a woman and a fish, but also has the further implausible feature of having a number of ravenous dogs surrounding her waist. As Lucretius continues his exposition against hybrids, he uses the Chimera (5.905) as a further example of an impossible creature, being made up of not just two bodies but three.

⁹ Campbell's note on *semen* is worth quoting in detail to understand Lucretius' theory of embryology at this point (2003, 133): 'the Epicurean theory of embryology is pangenetic, in a similar way to Empedocles and the Hippocratics ... that is that both parents contribute seed to the embryo, and the seed is drawn from all over the body ... Unlike other pangeneticists, however, the Epicurean theory is not preformationist: the seed does not contain miniature copies of individual limbs and organs, but carries an atomic pattern. This contains, in some way, an essence of each species, which ensures that species breed true and retain their ontological stability, and prevent species mutation'. This makes the centaur fundamentally impossible on a genetic level.

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Given that the Chimera, Centaurs and Scylla all reappear in *Tristia* 4.7, and given that Lucretius is specifically portraying the impossibility for such creatures to exist, it is likely that Ovid is alluding to this section from *DRN* 5 in the catalogue of hybrids from *Tristia* 4.7. This argument is further strengthened when we consider that Ovid in his depiction of the malformed bodies beneath the Nile floodplain (*Met.* 1.416-37) also alludes to Lucretius' *portenta*, which immediately precede the argument against the hybrids in the *DRN* (5.837-44) (chapter 6 §§3.2, 3.3). We have seen in chapter 1 (§3.1) that Lucretius in *DRN* 2 (700-6) has already dismissed the existence of compound creatures on the basis that there is only a limited number of possible atomic combinations.

At *DRN* 5.907-15, Lucretius continues to say that if anyone believes such creatures ever existed, even when the earth was young and full of seed and the sky new, he is welcome to spin out such fairy tales as these. While Lucretius' argument against hybrids appears to be an attempt to disprove the existence of the hybrid monsters of myth, it is also a careful attack against the compound creatures of Empedocles, including the hermaphrodite, man-faced ox-creatures and ox-faced man-creatures (fr. 66/61 §3.5 below and Conclusion §1).¹⁰ It will be argued that the presence of such hybrids in the *Metamorphoses* and in the catalogue from *Tristia* 4.7 may be seen as a double-allusion to Lucretius and Empedocles, as Ovid restores Empedocles' compound creatures to their mythological setting.¹¹ By apparently dismissing the existence of these creatures in *Tristia* 4.7, Ovid projects the argument from *DRN* 5, against Empedoclean hybrids, back onto the *Metamorphoses*, where Ovid had devised the type of world, which Lucretius sought to exclude. The catalogue of hybrids appears to be a standard *topos*,

¹⁰ Campbell (2003, 139): 'Explicitly Lucretius attacks the compound creatures of myth, but he is also arguing against the compound creatures of Empedocles, because he has made such extensive use of Empedoclean ideas and language, and because their theories of adaptation by the original production of 'hopeful monsters' are fundamentally similar... The implausibility of the existence of Empedocles' ludicrous compound creatures would thus be an excellent weapon against Lucretius'.

¹¹ On the connection between the centaurs in the *Ars Amatoria* (2.24) and Empedocles fr. 66/61, see §3.5 below.

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which appears in both philosophical and literary texts. The following section will examine a number of further instances of this topos in texts which may have exerted an influence on the *Tristia* and the *Metamorphoses*.

2.3 Comparison with the *Somnia Vana* in *Aeneid* 6

The same type of mythological topos also occurs in book 6 of the *Aeneid* (285-89), when Aeneas encounters the *somnia vana* ‘empty dreams’ that hang like bats beneath the *ulmus opaca*, the ‘shadowy elm’, at the entrance to Hades. Vergil describes how these dream-like creatures take the form of a series of hybrids:

multaque praeterea variarum monstra ferarum,
Centauri in foribus stabulant Scyllaeque biformes
et centumgeminus¹² Briareus ac belua Lernaee
horrendum stridens, flammisque armata Chimaera,
Gorgones Harpyiaeque et forma tricorporis umbrae.

And moreover many portents of different wild animals are housed at the doors, centaurs and double-formed Scylla and hundred-handed Briareus and the dreadful shrieking beast of Lerna and the Chimera equipped with fire, Gorgons and Harpies and the form of the triple-bodied shade (6.285-89).

This list of hybrids is again very similar to those we find in *Tristia* 4.7. The Centaurs, Scylla, a hundred-hander, the Chimera, Gorgons, and Harpies all reappear in *Tristia* 4.7, while Ovid’s *tergeminumque virum tergeminumque canem* may well be alluding to the *forma tricorporis umbrae*, who is usually identified in the *Aeneid* as Geryon, but as Clark (2003, 308) states ‘also reminds us’ of Cerberus. Central to this passage from the *Aeneid* is the ambiguity surrounding the reality of these hybrid creatures, whether they are

¹² *Centumgeminus* literally means ‘having a hundred doubles’ and so here refers to Briareus’ hundred pairs of hands. This bahuvrihi compound is discussed further below (§3.7). Valerius Flaccus (*Arg.* 6.118) uses the term in the sense of ‘hundredfold’ as a description of Thebes.

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akin to the *somnia vana* and are thus merely visions, or whether Aeneas encounters them in the flesh. In their potential to be empty images, Vergil is drawing upon the discourse that composite or dream-like hybrid creatures can exist in so far as *simulacra* of these creatures can exist.

At *DRN* 4.129-42, Lucretius says that *simulacra* can assume a variety of shapes, giving the example of monsters forming spontaneously in the clouds passing over our heads.¹³ He continues at 4.724-44 to show how monstrous illusions such as Centaurs, Scyllas and Cerberian dogs are the result of *simulacra* being confounded and mixed together. Impossible hybrid creatures, while having no grounding in reality, can result in the mind's eye through the merging of disparate images. Given that Vergil stresses the ambiguity surrounding the reality of these creatures as potentially being the stuff of dreams and fantasy, as well as the fact that Vergil lists a number of the same hybrids as Lucretius, it is likely that Vergil like Ovid is alluding to *DRN* 5.890-94, while it is also possible that Ovid in *Tristia* 4.7 is also alluding to *Aeneid* 6.285-89. Vergil begins the katabasis by invoking, among others, *chaos* (6.265), which may resonate with the association of the hybrid creatures with an earlier phase in world history as suggested in the *Metamorphoses*.

Hybrids and other monstrous apparitions are frequently used in philosophical discourse to question our ability to perceive and conceptualize reality. This appears to be a standard topos existing within a number of different modes and genres. Campbell (2003, 140) notes a number of further texts which like Lucretius utilize the Epicurean positivist theory of sense perception in order to account for images of compound creatures. Plutarch (*Adversus Colotem* 1123b, Inwood CTXT-50 / DK 60) uses hybrids to question the relationship between sense perception and reality. He shows how some philosophers argue that if we accept the fact that hybrids such as Empedoclean ox-faced man creatures do not exist in reality but can be imagined, how can we trust our ability to perceive reality if sense perception can dream up such illusions? Similarly in Cicero's *De Natura Deorum* (1.105), the academic skeptic Cotta argues that if the gods can only be

¹³ Diodorus Siculus (3.50.4) also discusses monstrous creatures forming in the clouds.

perceived through thought it does not matter if we imagine them as hippocentaurs or anthropomorphic beings.

The topos of using a list of hybrids in philosophical discourse can already be seen in Plato's *Phaedrus*. Phaedrus questions Socrates whether he believes the story to be true that at one time Boreas abducted Oreithyia. Socrates responds by arguing that if we correct the mythological account which relates that Oreithyia was abducted by Boreas and say instead that she was merely blown from a cliff by strong winds to her death, we next have to account for a whole host of monstrous apparitions:

ὅτι δ' αὐτῷ ἀνάγκη μετὰ τοῦτο τὸ τῶν Ἴπποκενταύρων εἶδος ἐπανορθοῦσθαι, καὶ αὖθις τὸ τῆς Χιμαίρας, καὶ ἐπιρρεῖ δὲ ὄχλος τοιούτων Γοργόνων καὶ Πηγάσων καὶ ἄλλων ἀμηχάνων πλήθη τε καὶ ἀτοπίαι τερατολόγων τινῶν φύσεων.¹⁴

So that it is necessary for him to correct the image of hippocentaurs, and in turn that of the Chimera, and there pours down on him a host of similar creatures, such as the Gorgon and Pegasus and so many other impossible beasts and absurd natures that belong in the stories of myth (229d5-e2, tr. adapted. Waterfield 2002).

Socrates argues that it a near impossible task for one man to find a way of rationalizing every form of monstrous creature related through myth. He gives the example of a number of hybrids including the hippocentaurs, Chimera, Gorgon and Pegasus, being a horse with wings. He says that such attempts to understand mythological creatures are absurd especially when one does not even understand one's own nature, and so he refuses to answer Phaedrus' question.

This passage from the *Phaedrus* shows another instance of the cataloging of monstrous hybrids being used as a means of questioning the relationship between imagination and the perception of reality. It thus may be seen as a further link in the chain of intertexts which we have so far

¹⁴ All displayed quotations from the *Phaedrus* follow Burnet's OCT (1963).

identified, including passages from Lucretius, Cicero, Plutarch and indeed Vergil. It also illustrates the ease by which the characters of myth find a place as a locus for speculation in philosophical and scientific texts. *Tristia* 4.7 feeds into this philosophical tradition that uses a catalogue of hybrid monsters to question our ability to perceive and conceptualize the nature of the world around us, especially since Ovid draws specific attention to whether we should believe that such hybrid creatures exist or not.

2.4 *The Hundred-Handers in Horace Odes 2.17 and Hesiod's Theogony*

A further example of this topos may be seen in Horace's *Odes* (2.17), where Horace describes a number of the hybrids which reappear in *Tristia* 4.7. There is also a thematic and structural similarity between Ovid's depiction of the hybrids in *Tristia* 4.7 and *Odes* 2.17, where Horace states that none of the fears of death, including some monstrous creatures, can separate him from Maecenas.

Me nec Chimaerae spiritus igneae
nec, si resurgat centimanus Gyas,
divellet umquam.¹⁵

Neither the breath of the fiery Chimera nor the hundred-handed Gyas if he were to rise again would ever tear me from your side (13-15 tr. adapted West 1997).

Both the Chimera and the hundred-handed giant Gyas reappear in *Tristia* 4.7.¹⁶ Ovid like Horace chooses to include the Hundred-Hander Gyas rather than his more familiar brother Briareos, who appears in the catalogue of hybrid monsters in *Aeneid* 6. There is also a structural similarity in the argument of *Odes* 2.17 with *Tristia* 4.7, as in both texts the listing of monsters is connected to the strength or weakness of friendship. Ovid subtly inverts the sentiment of *Odes* 2.17, as instead of aligning the strength of

¹⁵ All displayed quotations from Horace's *Odes* follow Garrod and Wickham's 1963 OCT.

¹⁶ On the variation of the name Gyas / Gyes / Gyges see note in §2.1 above.

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friendship with a willingness to encounter such creatures, Ovid bases the belief in his friendship upon the impossibility of these creatures existing.

In Hesiod's *Theogony* the Hundred-Handers are the three brothers Kottos, Briareos and Gyges, who are enlisted by Zeus to overthrow the Titans.¹⁷ Hesiod depicts them with a hundred hands and fifty heads:

τῶν ἑκατὸν μὲν χεῖρες ἀπ' ὤμων αἴσσοντο,
ἄπλαστοι, κεφαλαὶ δὲ ἐκάστῳ πεντήκοντα
ἔξ ὤμων ἐπέφυκον ἐπὶ στιβαροῖσι μέλεσσιν·

From their shoulders sprang a hundred arms, unshapen, and fifty heads grew from the shoulders of each, upon their close-pressed limbs (150-52 tr. adapted. West 1988).

In the *Theogony* the Hundred-Handers are imprisoned beneath the earth until Zeus frees them when enlisting them to defeat the Titans.¹⁸ Zeus then reinstalls them as jailers again beneath the earth to guard the defeated Titans. We get a similar, yet longer, catalogue of monsters in the *Theogony*, the progeny of Phorkys and Keto (270-336). Hesiod's list includes the Gorgons, Medusa, Geryon, Cerberus, the Chimaera and Sphynx, all of which reappear in *Tristia* 4.7.¹⁹ This further indicates how the topos of the

¹⁷ West (1966, 206) shows the difficulty of distinguishing the Titans from the Hundred-Handers. This may go somewhat to explaining why Ovid's Giants appear to have Hundred-Hander characteristics in *Met.* 1.183-84.

¹⁸ The imprisonment of the Hundred-Handers beneath the earth, along with their subsequent installment as jailers, by Zeus in order to guard the defeated Titans after the Titanomachy (734-35) locates them in a very similar position to where we find Briareos inside the gateway of the underworld at *Aeneid* 6.287 and indeed Gyas is also associated with the Underworld in Horace *Odes* 2.17. In *Tristia* 4.7, however, like the monsters from *DRN* 5, the Hundred-Handers are seen more as part of the ancient history of the world.

¹⁹ The catalogue of monsters is a particularly old motif. In the Babylonian creation narrative *Enuma Elis*, we get a catalogue not dissimilar to Hesiod or for that matter to Ovid: 'She [Tiamat] stationed a horned serpent, a *mušhuššu*-dragon, and a *lahmu*-hero, | An *ugallu*-demon, a rabid dog, and a scorpion-man, | Aggressive *ūmu*-demons, a fish man, and a bull-man | Bearing merciless weapons, fearless in battle' (Dalley tr. 2000, 237). Tiamat creates

catalogue of hybrid monsters has its origin in mythological narrative, yet easily shifts into scientific and philosophical debates about intermediary stages in the development of life in the early history of the universe and the difficulty of how to relate these creatures to the monsters of our imagination.

It has been argued that Ovid's depiction of the hybrids in *Tristia* 4.7 alludes to Lucretius' denial of the existence of such hybrids in *DRN* 5, and that Ovid in turn is constructing a double allusion to the compound-creatures of Empedocles. We have, however, noticed a number of other correspondences between Ovid's depiction of the hybrids in *Tristia* 4.7 and the *somnia vana* from *Aeneid* 6 as well as Horace's *Ode* 2.17. We have also observed how the catalogue of hybrids can be seen as a standard topos in philosophical discourse which draws from mythological texts. By alluding to Lucretius and Empedocles in particular Ovid illustrates how this topos shifts between different modes of discourse, as he returns the hybrids to their mythological setting. Ovid's compounding of different texts and modes of discourse could also be seen as implicitly referring to the corporeal composition of the hybrids themselves. The following section will illustrate how Ovid's depiction of the composite forms of the Giants further illustrates the latent chaos still present in the formed universe and how the hybrids may be seen as leftovers from a primeval phase in universal history.

3. SNAKE-FOOTED GIANTS

3.1 Gigantomachy in the Metamorphoses

We have argued in the previous section that Ovid's depiction of the hybrids in *Tristia* 4.7 carefully generates a number of allusions to different texts from different discourses. This section will examine further one of the more unusual kinds of hybrid that appear in *Tristia* 4.7, the *serpentipedes*

these monsters to help her in battle in much the same way that Gaia creates the Giants to attack Zeus after her children the Titans are defeated (Pseudo-Apollodorus 1.34-38). See West (1966, 243-244) for a diagram of the monsters' family tree, and also Haubold (2013, 52-58), Bremmer (2008, 1-18) and West (1963, 161; 1997, 276-333) for the connection between the *Theogony* and the *Enuma Elis*.

Gigantes, ‘snake-footed Giants’. Unlike all the other hybrids which Ovid describes, snake-footed Giants seem to appear nowhere else in extant literature prior to Ovid.²⁰ In contrast they appear three times in Ovid’s works, in the *Metamorphoses* (1.151-62, 182-86), *Fasti* (5.35-43) and *Tristia* (4.7). Given, as we have seen, the layered allusions in *Tristia* 4.7 to other texts and the frequency which the other hybrids from the *Tristia* appear in other catalogues of monsters, this makes the absence of snake-footed Giants in texts prior to Ovid all the more remarkable. This section will serve as a case study on the snake-footed Giants. It will examine a number of visual representations of the gigantomachy, which may have influenced Ovid’s depiction of the Giants in the *Tristia* and the *Metamorphoses*. It will also examine if any traces of snake-footed Giants can be identified in literature prior to Ovid, and in particular it will argue for a reinterpretation of one of Empedocles’ compound creatures based upon Ovid’s depiction of snake-footed Giants.

Ovid also describes the snake-footed Giants in the Gigantomachy of *Metamorphoses* 1.²¹ Here, however, they have an alternative epithet and even more unusually, like the Hundred-Handers, have a hundred arms. After the war with the Giants, Jupiter, at the council of the gods, recalls their appearance:

non ego pro mundi regno magis anxius illa
tempestate fui, qua centum quisque parabat
inicere anguipedum captivo bracchia caelo.

²⁰ I have so far come across no definite treatment of snake-footed giants in literature prior to Ovid. This is of course restricted to surviving literature. The lost *Titanomachy* ascribed to Eumelus might be somewhere you would expect such a representation.

²¹ Knox (2009, 208-9) suggests the tenuous possibility that Ovid may have composed a *Gigantomachy* of his own: ‘The attack of the Giants on the Gods was also an extremely popular theme in Greek literature and art, which may have been handled by Ovid in another lost work’. Knox cites as the only *testimonium* for this as Ovid’s own declaration at *Amores* 2.1.11-16: *ausus eram, memini, caelestia dicere bella | centimanumque Gygen (et satis oris erat)* ‘I had dared, I remember to tell of the wars of heaven and hundred-handed Gyges (for there was enough mouth)’.

I was no more troubled for the kingdom of the world on that occasion when each of the snake-footers was preparing to cast his hundred arms on captive heaven (1.182-84)

In the *Tristia*, the epithet *serpentipedes* for the Giants is derived ultimately from the verb *serpo* and so could simply mean the ‘creeping-footed ones’, rather than the ‘serpent-footed ones’ from the lexicalized meaning of *serpens* ‘snake’. In the *Metamorphoses*, the epithet *anguipedes* clearly refers to the Giants as having snakes for feet. At *Fasti* 5.35-38 Ovid gives a more detailed description of the Giants. Here he describes how Earth produced them and instead of a hundred arms they have a thousand: *mille manus illis dedit et pro cruribus angues* ‘she [Earth] gave them a thousand hands and snakes for legs’. He describes them as *feros partus*, ‘wild progeny’, and as *immania monstra*, ‘enormous portents’.²² This suggests that each of the Giants’ legs terminates in a snake. This is quite different from many deities connected with the sea or rivers, which tend to have the lower body of a sea-serpent.²³

The Gigantomachy in the *Metamorphoses* occupies a similar position in the history of the universe to the Titanomachy in Hesiod’s *Theogony*, as the primary attempt by a rebel faction to take over the heavens. In Hesiod it is the Titans who fight against Ouranos (*Theog.* 389-96, 629-735), while the Giants are merely described as being born from the blood that falls onto the earth after the castration of Ouranos (*Theog.* 183-87). In many accounts, however, the Giants either make an attempt to overthrow Jupiter or are allies of the Titans in a joint assault.²⁴ West (1966,

²² Vergil describes *Fama* as a *monstrum horrendum ingens* (*Aen.* 4.181)

²³ Numerous examples can be seen in the *LIMC*: Nereus, Oceanus, and Achelous are frequently depicted with the lower half of their body as a sea-serpent.

²⁴ Pindar (*Nem.* 1.65-72), Aristophanes (*Birds* 825), Plato (*Euthyphro* 6b, *Republic* 378c), Diodorus Siculus (4.15.1, 5.71.4) and Pseudo-Apollodorus (1.34-38), all describe the Gigantomachy. Lycophron (*Alex.* 697 ff.), Vergil (*G.* 1.276-) and Quintus of Smyrna (5.103 ff.) depict the Giants and the Titans fighting together. It is also perfectly possible that the lost *Titanomachy* could have contained both an assault by the Titans and the Giants, either

337-38) discusses the frequent confusion between the Titanomachy and Gigantomachy in later literature. It may be more fruitful to view this process in terms of creative amalgamation, conflation and transformation of iconography as opposed to confusion, as poets drew from a fluid set of iconographic signifiers for the Giants. This may even be seen when we compare Ovid's Gigantomachy in the *Metamorphoses* and the catalogue of hybrids in *Tristia* 4.7. The Hundred-Hander Gyas is distinct from the snake-footed Giants in the *Tristia*, while in the *Metamorphoses*, and indeed the *Fasti*, the Giants adopt their hundred hands from the Hundred-Handers.²⁵

The frequent confusion between these characters, as well as their iconographic fluidity, can also be seen at *Met.* 1.151-62, when Ovid describes how the Giants piled up the mountains Olympus, Pelion and Ossa in order to overthrow Jupiter. The same account is given in the *Fasti* (3.439-42 and 5.39-40). In the *Amores* (2.1.11-13), however, it is the Hundred-Hander Gyas who piles up the mountains. In the *Georgics* (1.278-83), it is the Titans, Typhoeus and their brethren (assumed to be the Giants) working together who perform this act, while in the *Odyssey* (11.305-20) it is Otus and Ephialtes who piled up the Thessalian mountains.²⁶ The piling up of the mountains is a clear attempt to defy spatial boundaries and recombine the physical parts of the universe that had been separated in the cosmogony. Indeed when the mountains are dashed upon the Giants at *Met.* 1.156, they are described as a *moles*, the same term which Ovid uses for the shapeless mass of *chaos* in the primordial universe. In a sense the Gigantomachy threatens to return the world to *chaos*, both in political and universal terms. The Giants rebel and try to bring the sky and earth back together. This is

separately or together. Philostratus (*VA* 5.16) describing the tombs of the Giants, disagreed with the accounts that said that the Giants waged war against the heavens. It should be noted that in none of the above depictions are the Giants described as having snakes for legs.

²⁵ Typhoeus is said to have a hundred hands (*centimanus*) at *Met.* 3.303.

²⁶ The Aloadae, Otus and Ephialtes are later often added to lists of the *Gigantes*. Seneca in *Hercules Furens* (967-80) and also Nonnus in the *Dionysiaca* (48.31 ff.) describe how the Giants use the mountains (including Pelion) and also reefs, as missiles to throw against the gods.

also seen in the image from *Met.* 1.184 of the Giants throwing (*inicere*) their hundred-hands upwards in order to seize the heavens. As Hardie (1986, 85) states Gigantomachy ‘is a myth that concerns the struggle between cosmos and chaos at the most universal level’.

3.2 Visual Depictions of Snake-footed Giants: The Pergamum Frieze

While there are few literary sources for snake-footed Giants prior to Ovid, they frequently occur in visual representations of the Gigantomachy.²⁷ There was a long tradition of visually depicting Gigantomachy in Greece, including on the peplos presented to Athena on the Acropolis of Athens as part of the Panathenaic festival. In Plato’s *Euthyphro* (6b), Sophocles questions Euthyphro on whether he believes that battles between the gods ever occurred, as related by the poets and represented in varied designs by the great artists and especially on the robe which is carried up to the Acropolis at the Panathenaia, for this is covered with such representations.²⁸ This reflects the prominence of the Gigantomachy as a theme in visual art. This can also be seen in the many depictions of the Gigantomachy, which have been recorded between the mid sixth century BC and the end of the Imperial age.²⁹ Daniel Ogden (2013, 82-83) states that it is in the iconographic record of the fourth century BC that the Giants first acquire their serpent feet; the earliest depiction of a snake-footed Giant can be seen on a red-figure vase of c. 400-375 BC.³⁰ The characteristic of snake-feet

²⁷ An analysis of the traces of snake-footed Giants in literature prior to Ovid is delayed until §3.4 below.

²⁸ Euripides (*Hecuba*. 466; *Iphigenia in Tauris* 221-240), Aristophanes (*Knights* 565), and Plato (*Republic* 2.378c) also give accounts of Athena’s peplos and its depiction of the Gigantomachy.

²⁹ *LIMC* includes 613 entries.

³⁰ This is listed in *LIMC* as Gigantes 389. Dodd (2014) also notes an Etruscan onyx scarab gem, which depicts an anuipede Giant battling Zeus.

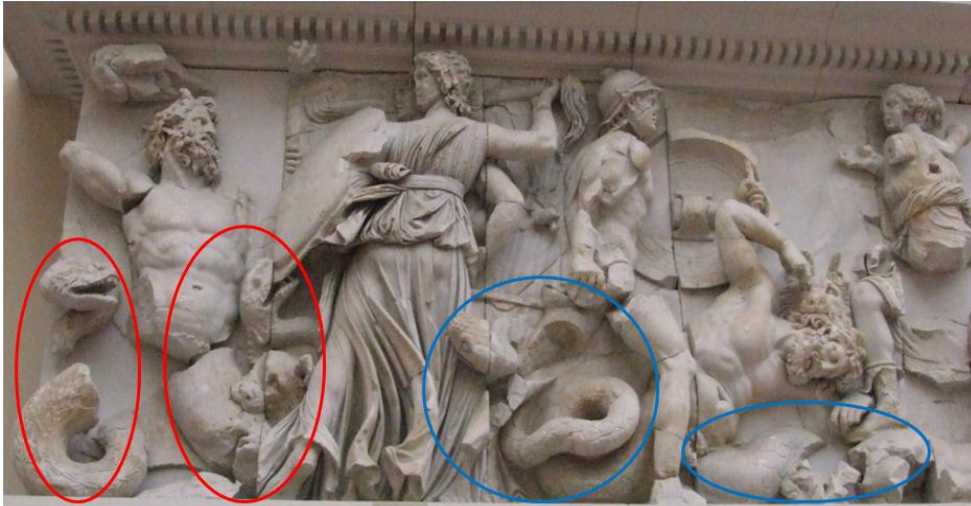


Figure 6: Giants Klytios and Otos struggling with Hekate from the east side of the Pergamum Frieze (2nd CBC)

becomes more and more common throughout the Hellenistic period; usually with each of the Giants legs gradually taking snake form, starting just below the thigh and terminating in a snake head instead of a foot. They occasionally, however, appear in other forms, emphasizing the continued amalgamation, adaptation and fluidity in their iconographic representation.³¹

One of the best preserved depictions of snake-footed Giants occurs on the Gigantomachy frieze on the Pergamum Altar, which was constructed in the first half of the second century BC. Hill (1985, 173) states that it would have been ‘extremely likely’ that Ovid would have had access to copies of the frieze.³² Likewise Hardie (1986, 127), discussing its potential influence on the *Aeneid*, states that ‘it would be surprising if [Pergamum’s] cultural and artistic influence was not felt in Rome’.³³ Hardie compares the cosmic and political agendas of the *Aeneid* and the Pergamum frieze (125-

³¹ Ogden (2013, 83) notes a number of other configurations in which the Giants are also occasionally found: with a single or double serpent-tail with no head on the end (from 4th CBC); with each of their serpent legs bifurcating to end in a total of four serpent heads (from 3rd CBC); with two fish-tails; with serpents sprouting from the hips or the shoulders (from 3rd CBC); with serpents mixed in the hair (from c. AD 150).

³² Hill (1985, 173) notes that ‘The Pergamene frieze was so extensively copied in the Hellenistic and Roman worlds that it is extremely likely that Ovid himself would have seen such representations’. Snake-footed Giants also appear on the coffers of the Athenaion at Priene, ‘now seen to predate the altar at Pergamum’ (Ridgway 2000, 34).

³³ The influence of the Pergamum frieze can be seen for instance on a second century Sarcophagus which depicts a ‘Pergamene-inspired’ gigantomachy (Strong 1995, 200)

143).³⁴ The Gigantomachy frieze depicts universal strife, as the Giants attempt to overthrow the existing world order. As Hardie (1986, 139) states the frieze ‘stresses the fact the whole universe, with its presiding deities is threatened’, ‘signifying an attempt on the part of the forces of chaos to reassert themselves against the newly-created cosmos.’ There is a clear parallel with Ovid’s depiction of the Gigantomachy in the *Metamorphoses*, where the Giants’ attempt to take over the heavens likewise threatens to return the world to a state of chaos.

Many have posited a literary source for the Gigantomachy frieze on the Pergamum Altar. Simon (1975) has argued the connection with Hesiod’s *Theogony*, while Hardie (1986, 139-40) has also stressed the connection with Stoic cosmic allegory. In particular Hardie points to the fact that Crates of Mallos was active in Pergamum at the time of the Altar’s construction: ‘Crates was one of the chief practitioners of a Stoicizing type of allegorization, which sought to identify the localized human and divine events of the Homeric epics as veiled descriptions of the large-scale physical processes of the universe’ (140). Hardie show how the way in which the myths of Gigantomachy and the closely related Titanomachy are presented provides opportunities for such exegesis, noting in particular how ‘Byzantine scholia on Hesiod preserve the remains of a (probably ancient) elemental and meteorological allegorization of the Hesiodic battles of Zeus against the Titans and other monsters; Crates himself is known to have contributed to Hesiodic scholarship’ (140). The problem remains that the Giants are barely mentioned in the *Theogony* with little said of their physical description (see above). Given the complexity of the scene on the frieze, it is reasonable to assume that some form of literary text or catalogue would have been needed as an aid to its construction. Something along the

³⁴ Hardie emphasizes the dearth of literary sources surviving from Pergamum and the impact that this has had in the elevation of Alexandrian literary influences ahead of those from other cities by modern scholars: ‘Pergamum was the second most important Hellenistic cultural centre, and one that from a fairly early date enjoyed very close relations with Rome. It is the almost total loss of its *literature*, which indeed scarcely ever rivaled that of Alexandria, that is chiefly responsible for the Latin literary historian’s neglect of Pergamum’ (127-28).

Hybridity

lines of the *Titanomachy* attributed to Eumelus of Corinth may be a likely source.³⁵ There is the tenuous possibility that a lost text used by the artists at Pergamum might be the same or similar to a text which influenced Ovid's snake-footed Giants; however, this should not detract from the potential impact of visual representations of the Gigantomachy on Ovid's depiction of snake-footed Giants.

Most of the Giants depicted on the Pergamum frieze have two serpentine legs (*Figure 6*); however, some have other animal characteristics. Along with the snake-footed Giants, there is a bull-giant, a lion-giant, and a bird-giant (Ridgway 2000, 36). Due to the fragmentary nature of the frieze it is difficult to say precisely how many of the Giants are snake-footed, but serpentine feet are by far the most prominent of their bestial attributes. It should be noted that some of the snake-footed Giants also have wings, similar to the Giant from the Athenaion at Priene. Some of the better preserved Giants on the Frieze are identified as follows:³⁶ On the east side of the frieze (*Figure 6*), the Giant Klytios battles Hekate, with one of his snake-feet biting Hekate's shield; to the right of these figures, Otos another giant is straddled on the ground, with one of his snake-legs twisting over and biting the dress of Hekate; Alkyoneus, the king of the Giants occupies the central scene; while other notable depictions of snake-legged Giants on the frieze include Porphyrion, an unidentified winged giant beneath Eros, a further unidentified Giant battling Enyo and Agrios. While there is a degree of tension running throughout the frieze, there is never any doubt that the Giants are being defeated. Indeed their fighting is mostly feeble. In *Figure 6*, it appears that the snakes do no more than nibble on Hekate's shield and clothing.

³⁵ West (2003, 26-27) discusses the texts that have been attributed to Eumelus of Corinth, including the *Titanomachy*. The handful of fragments which survive and which are attributed to this work show that it began with some account of the earlier generations of the gods (fr. 1, ed. West 2003). It also included a many-handed sea god, presumed to be Aigaion or Briareos (fr. 3).

³⁶ The names of the gods are inscribed on the cornice, while the names of the Giants are inscribed on the pedestal next to the names of the sculptors.

Hybridity

Despite the clear victory of the gods, and the triumph of the ordered universe over chaos, the symbolic interchangeability between the Giants and the gods, coupled with the stylistic blending of human and animal forms, give an overall picture of corporeal mutability.³⁷ If the gods are winning, they do so by resorting to the bestial, while the giants are defined by their animal hybridity. At times it is almost impossible to distinguish which body

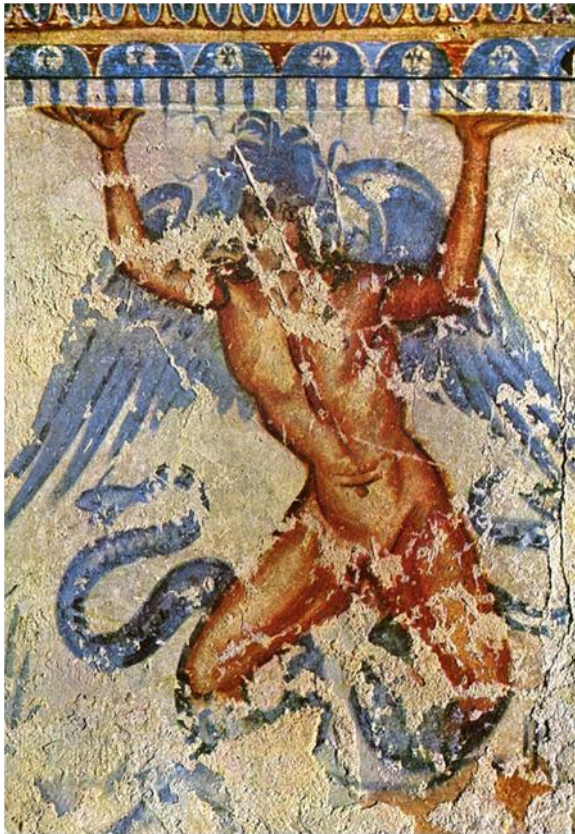


Figure 7: Snake-footed Giant fresco from the Tomb of the Typhon, Tarquinia (date disputed)

part, be it animal or anthropomorphic, belongs to which figure. The snakes in particular are utilized to this effect as they can weave in and around the bodies of both the Giants and the gods, adding even further to the corporeal confusion.³⁸ Given Ovid's highly visual representation of metamorphosis, the appeal and potential influence of such an image is clearly apparent, especially one that shows the ordered universe threatened by the forces of

chaos. Indeed the Pergamum frieze itself could almost be seen as a visual catalogue of hybrid creatures as it also includes other hybrid figures, including the lion-giant, bull-giant, fish-giant, and bird-giant.

3.3 Further Visual Depictions

³⁷ Ridgway (2000, 39) noting a series of paradoxes that run throughout the frieze, states that 'the snake, as Athena's familiar, is an excellent, almost Dantesque *contrapposto* for the serpentine legs of most Giants'.

³⁸ Comparisons can be made with the way in which the snakes twist around the bodies in the statue of Laocoön and his sons.

Hybridity

There are a number of extant Etruscan depictions of anguipede Giants, which introduces the possibility that Ovid's snake-footed Giants may have been influenced by a visual source closer to home. The tomb of the Typhon in Tarquinia contains paintings of a winged anguipede Giant (*Figure 7*); it remains difficult to decide whether this figure is indeed Typhon as the name given to the tomb suggests or one of the *Gigantes*.³⁹ Hurwit (1999, 108-9) posits a number of potential identities for this figure including Typhon, Geryon, and a composite of Oceanus, Pontus, and Aither.⁴⁰ The Giant is depicted with each of his legs forming into the body of a snake,

beginning from below the knee; however the legs appear to terminate in fish instead of snake-heads. He is also depicted in the form of caryatid, holding up the roof of the



Figure 8: Mosaic depicting Snake-footed Giants from the Villa Romana del Casale (3rd CAD), Piazza Amerina, Sicily

structure. The Giant is accompanied by a single winged goddess whose waist sprouts tendrils as replacement legs.⁴¹ The figures resemble the snake-

³⁹ The precise date for the Tomb of the Typhon is still disputed. Steingraber (2000, 241) suggests that the tomb was in use from the middle of the second until the first century BC, and was reused in the Roman Imperial period. Rupp (2007, 217), however, argues against Steingraber, siding instead with Colonna (1984, 23) who argued that the tombs in Tarquinia were no longer painted after the end of the third or the beginning of the second century BC, using this as evidence to date the tomb of Typhon to the third quarter of the third century BC.

⁴⁰ Rupp (2006, 30) also discusses these possible identities.

⁴¹ Rupp (2007) discusses this vegetal goddess or '*Rankenfrau*' in the Tomb of the Typhon, whom he identifies as Cel Ati, the Etruscan Mother Earth. Ustinova (2005) also discusses snake-limbed and tendril-limbed goddesses in the Mediterranean and the Black Sea.

footed Giants that appear on the Pergamum frieze. It has now, however, been well established that the Pergamum frieze could not have influenced the depictions in the tomb of the Typhon, and that given the tomb's prominent location it could easily have influenced other representations of snake-footed Giants in the area (Rupp 2006, 30-31).⁴²

Given the wealth of visual depictions of snake-footed Giants it is likely that Ovid would have been familiar with these figures as common throughout the iconographic tradition. A later depiction of snake-footed Giants appears in a 3rd century AD Roman Mosaic from the Villa Romana del Casale, in Piazza Amerina, Sicily (*Figure 8*). The way the Giants are depicted is again very similar to the Pergamum frieze and the tomb of the Typhon. Each of their legs is a snake which terminates with the snake's head. While we could take this as evidence for the widespread penetration of Gigantomachy iconography from the Pergamum frieze and elsewhere, there is also the converse possibility the artist might have been attempting to depict Ovid's snake-footed Giants.

3.4 Literary Traces of Snake-Footed Giants

There is little direct evidence to show that snake-footed Giants appeared in literature prior to Ovid. Most significantly shortly after Ovid, Manilius in the *Astronomica* (4.581) describes Venus *anguipedem alatos umeros Typhona ferentem* 'carrying Typhon snake-footed and with winged shoulders'. Manilius uses the same epithet, *anguipes*, which Ovid uses for the snake-footed Giants in the *Metamorphoses* (1.184). We have already seen in the Excursus to chapter 3 the likelihood that Ovid exerted a significant influence on Manilius. This would support the argument that Manilius derived the epithet from the *Metamorphoses* and applied it to Typhon; however, conversely it could also indicate the use of the epithet in a lost source prior to Ovid, especially given that Typhon appears as snake-footed in the iconographic tradition as well.⁴³ Lucretius twice uses a similar

⁴² Rupp (2006, 29-33) discusses a number of other visual representations of snake-footed figures, including "Bluebeard", a triple-bodied anguipede who decorated the pediment of the Archaic "Hekatompedon" from the Athenian acropolis (ca. 560 BC).

⁴³ This may be seen in the Tomb of the Typhon in Tarquinia (above).

epithet *anguimanus* when referring to elephants (*DRN* 2.537, 5.1305-6). The epithet appears nowhere else in classical Latin and is a kenning for the elephant's trunk (Clausen 1991, 546).⁴⁴ It is possible to read *anguipes* as akin to *anguimanus*. Other notable passages, which appear to describe snake-footed giants, include Pseudo-Apollodorus (1.34) who says that the lower part of the Giants' limbs were covered in snake scales and Pausanias who states that the Giants having snake-feet is an absurd story (8.28.1).⁴⁵ More generally, that the Giants were considered to be some form of hybrid creature can already be seen in fr. 4 (Strzelecki) of Naevius' *Bellum Punicum*, where they are called the *bicorpores Gigantes* 'double-bodied Giants'. This presumably refers to the Giants as being snake-footed or having some other snake-like element. This more general hybridity is also indicated by Diodorus Siculus, who uses the term πολυσώματοι 'many-bodied' (1.26.6) to describe the Giants.⁴⁶

The epithet δρακοντόπους appears in a number of later scholia and is presumably the Greek equivalent of *anguipes*. In Isaac and John Tzetzes' collection of scholia on Lycophron, Earth begets δρακοντόποδας καὶ βαθυγενεῖους καὶ βαθυχαίτας Γίγαντας 'snake-footed, long-bearded and long-haired Giants' (63, ed. Hornblower 2015). Barchiesi (2005, 184) notes how the epithet δρακοντόπους is also used in the scholia on Aeschylus' *Seven Against Thebes* (495-96) when describing the image of Typhon embossed on the shield of Hippomedon. This shows another instance of an equivalent epithet being applied to both Typhon and the Giants.

⁴⁴ Gale (2009, 205-6) states that this compound adjective is apparently a Lucretian coinage and emphasizes the monstrosity of this animal to Roman viewers. The elephant's trunk is also called a hand in Cicero's *DND* (2.123) and in Pliny (*Natural History* 8.29).

⁴⁵ Bremmer (2008, 75) gives a detailed description of the works that Pseudo-Apollodorus was drawing upon in a narrative that incorporates both Hesiod's version of the Titans and the Cyclic *Titanomachy*. Lucian (*Philopseudes* 24.8-10) also says that Hecate had snakes for feet.

⁴⁶ Diodorus in this passage (1.26.6-7) says that the creatures which the Greeks call Giants were monstrous figures (τερατώδης) depicted on Egyptian temples being beaten down by Osiris. Diodorus also states that some people say that they were born from the earth during the early stages of the generation of living beings.

Hybridity

In a 2004 paper D'Alfonso discusses snake-footed Giants in John Malalas' (c. 491-578) *Chronographia*. Malalas when giving a catalogue of various representations of Giants in both Christian and Pagan texts, recalls how either Pindar or Peisander (either of Camirus or Laranda) said that the Giants were born from the earth, ἔχοντας πόδας δρακόντων 'having snakes for feet'. He then gives them the epithet δρακοντόποδες, 'snake-footed', as they have feet which walk towards evil things (1.3.54, ed. Thurn 2000). He then recounts how the Giants were destroyed after attempting to take over the heavens; either they were struck by lightning, arrows or a ball of fire, turned to stone, or overwhelmed by a large body of water. D'Alfonso (2004, 123) sees the large body of water as pointing to the flood as the ultimate revenge by Zeus against the Giants and the human race in the *Metamorphoses*. Malalas also cites the Phaethon narrative from the *Metamorphoses*, as an example of a meteor striking the earth, shortly before his description of the snake-footed Giants.⁴⁷

As regards the source of Malalas' description of the snake-footed Giants, Peisander is named in the majority of the manuscripts while Pindar is given in just one. D'Alfonso discusses in depth whether Peisander of Laranda who, flourished under the reign of Alexander Severus (222-235 AD), or Peisander, the Ancient Greek epic poet writing in about 640 BC, is the figure which Malalas is referring to. His identity remains unresolved, with D'Alfonso edging more towards the later Peisander of Laranda. Peisander is the harder reading so may be more likely to be the original. There remains the possibility that Malalas is referring to the epic Peisander or Pindar, in which case we may have a narrative which includes a snake-footed Giants prior to Ovid; however, if it is probable that Malalas was familiar with the Gigantomachy in the *Metamorphoses*, it appears more likely that his depiction of the snake-footed Giants and particular the epithet

⁴⁷ We might also compare this to the similar demythologizing of the *Phaethon* narrative in the *Timaeus* (22c ff. discussed in chapter 4 §4.1) as Malalas likewise interprets the Phaethon narrative as recalling an actual meteor strike.

δρακοντόποδες is looking towards the *anguipedes* of *Met.* 1.184.⁴⁸ The above examples show the difficulty of finding any traces of snake-footed Giants in literature before Ovid.

3.5 Empedocles' Hundred-Handers with Twisted-Feet

The following section will discuss another possible source for Ovid's snake-footed Giants, which is more in keeping with the allusions that have so far been identified in *Tristia* 4.7. It has been suggested above (§2.2) that Ovid may well be alluding to Empedocles' list of hybrid creatures in the catalogue of *Tristia* 4.7. This section will argue that snake-footed hybrids may also appear in Empedocles. This will involve a reinterpretation of one of the Empedoclean hybrids in order to demonstrate this affinity. Section 3.7 will then provide further evidence to show how Empedoclean elements may be identified in the linguistic structure of *Tristia* 4.7, as both Ovid and Empedocles use compound adjective to describe compound creatures.

After the first generation of living beings emerge in the form wandering and disjointed limbs (fr. 64/57 §3.2.3), Empedocles describes the second generation of dream-like (ειδωλοφανεῖς)⁴⁹ hybrid creatures (fr. Inwood 66 / DK 61):

πολλὰ μὲν ἀμφιπρόσωπα καὶ ἀμφίστερνα φύεσθαι,
 βουγενῆ ἀνδρόπρωρα, τὰ δ' ἔμπαλιν ἐξανατέλλειν
 ἀνδροφυῆ βούκρανα, μεμειγμένα τῆι μὲν ἀπ' ἀνδρῶν

⁴⁸ Also worth noting is the story of Erichthonius, who according to Servius in his commentary on the *Georgics* (3.113) had snakes for feet and that he had a special chariot made to hide his hideous feet. The 12th century Neo-Platonist philosopher Bernard of Chartres, in his Glosses on Plato's *Timaeus* (210-215, p.153 Dutton), recounts how Erichthonius had snakes for feet: *Ex parte terrae serpentinos pedes habuit, ex parte hominis in superioribus homo fuit* 'From the part which earth, he had serpent feet, while from the part which was human was higher than human'. Erichthonius' feet physically indicate his chthonic origin. Hyginus in his *Fabulae* (166) shows how Erichthonius' name is a compound form being made up of ἔρις 'stife' and χθών 'earth'.

⁴⁹ Aetius uses the term εἰδωλοφανεῖς for the dream-like creatures in this stage of Empedocles' world history (5.19.5 = Inwood A72). Sedley (2003b, 3) states that 'in this hapax legomenon Aetius is unmistakably preserving another of Empedocles' own epithets'.

τῆι δὲ γυναικοφυῆ σκιεροῖς ἠσκημένα γυίοις.

Many with two faces and two chests grew, oxlike with men's faces, and again there came up androids with ox-heads, mixed in one way from men and in another way in female form, outfitted with shadowy limbs.⁵⁰

Empedocles describes double-formed creatures with two faces and two chests, hybrids of humans and oxen, and hermaphrodites.⁵¹ Ovid's description of the *semibovemque virum semivirumque bovem* 'the half-bull man and the half-man bull' from the *Ars Amatoria* (2.24) has long been recognized as a direct allusion to Empedocles' βουγενῆ ἀνδρόπρωιρα 'man-faced ox-creatures' and ἀνδροφυῆ βούκρανα 'ox-faced man-creatures' (Hardie 1995, 214). Ovid also includes the *semibovem virum* 'half-bull man' in the catalogue of hybrids from *Tristia* 4.7, who appears alongside the hundred-hander Gyas and the snake-footed Giants. Ovid may also be alluding to the Empedoclean creature with two faces and two chests in his description of Janus as *biformis* 'two-formed' in the *Fasti* (1.89, chapter 5 §5.1).⁵² Additionally, Hermaphroditus, who is also called *biformis* at *Met.* 4.387, may also be an allusion to the Empedoclean hybrids with a mixture of male and female form.⁵³ The cumulative evidence suggests that Ovid

⁵⁰ fr. 66/61 is derived from Aelian *On Animals* (16.29).

⁵¹ Wright (1995, 213-14) states that the ἀμφιπρόσωπα 'double-faced' hybrids are comparable to Janus. He also notes other precedents for such creatures in myth: Otus and Ephialtes were punished in Tartarus by being tied back to back on either side of a column, and this composite figure, like Janus, seems to be connected with a calendar symbol. Plutarch uses ἀμφιπρόσωπος of Janus (*Num.* 19.6). Wright also compares the two-headed dog, Orthos-Sirius, regarded as the old and new year, and the three faces of Hecate at the crossroads looked in different directions, and states how multiple-headed creatures were familiar in the representations of Cerberus, Scylla and Hydra.

⁵² In Aristophanes' speech from Plato's *Symposium*, the early generation of humans are also depicted as double formed and having two faces, being divided into three sexes, male, female and hermaphrodite (189e5-190a5). This passage is discussed in the Conclusion §1.

⁵³ Chapter 6 (§§3.3, 3.4) argues that Ovid's description of Hermaphroditus alludes to the *portenta* of *DRN* 5.839 which is in turn interpreted as an allusion to Empedocles'

knew Empedocles' description of the hybrids well and alluded to it on a number of occasions.

Plutarch, in *Adversus Colotem*, also recounts two Empedoclean hybrids, only one of which appears in fr. 66/61 (above):

ταῦτα μέντοι καὶ πολλὰ τούτων ἕτερα τραγικώτερα, τοῖς
Ἐμπεδοκλέους εἰκότα 'τεράσμασιν' ὧν καταγελῶσιν,
'εἰλίποδ' ἀκριτόχειρα' καὶ 'βουγενῆ ἀνδρόπρωρα'

These, moreover, and many others, even more melodramatic than these, which resemble the monsters of Empedocles (which they laugh at) 'with twisted feet and a hundred hands' and 'oxlike [animals] with human faces' (Plutarch *Adversus Colotem* 1123.B.8-10; Inwood: CTXT-51).

Plutarch recalls two Empedoclean hybrids, the man-faced ox-creatures and another hybrid which he describes using two compound adjectives εἰλίποδα and ἀκριτόχειρα. In Inwood's reconstruction of the text the εἰλίποδ' ἀκριτόχειρα hybrids are left out; however Pierris (2003, LXXXI fr. 133 = DK 60) and Wright (1995, 295 fr. 140 = DK 60) both include them in their reconstruction, with Pierris having them immediately precede the fragment describing the other hybrids (134 = Inwood 66 / DK 61), maintaining the order of Diels-Kranz. Given that Plutarch groups the εἰλίποδ' ἀκριτόχειρα with the βουγενῆ ἀνδρόπρωρα which appear in fr. 66/61, there appears no reason to doubt that εἰλίποδ' ἀκριτόχειρα are Empedoclean in origin and not a fabrication of Plutarch. It also appears likely that they were part of a more detailed description of hybrid creatures along with fr. 66/61. That these are compound adjectives strengthens the argument for their derivation from Empedocles; Sedley (1998, 25 and 2003b) shows how compound adjectives are 'among the most prominent features of Empedocles' verse'.

description of the hybrids in fr. 66/61 and furthermore that Ovid constructs a double-allusion to both the *portenta* from the *DRN* and the hybrids from Empedocles. See also Conclusion §1.

Hybridity

Inwood translates ἀκριτόχειρα as ‘with a hundred hands’; however ‘countless-hands’ may be a more apt translation, as the adjective ἀκριτος is used of something ‘indistinguishable’ or ‘continuous’ in Homer, and later tends to refer to something numerically uncountable.⁵⁴ If we consider the hybrid’s hands to be indistinguishable, this could either suggest that this figure has so many hands that they cannot be differentiated from each other and are thus countless, or his hands cannot be distinguished from the body. In the first case we would be dealing with something resembling a hundred-hander, in the second, the figure might better be imagined as a malformed being of the early universe. Wright (1995, 295) opts for this second interpretation, picturing the creature with its limbs not properly distinguished from its body; Sedley (2003b, 5 n. 13) however states that it is much likelier that the creatures are hybrids as opposed to beings with physical handicaps.⁵⁵ The coupling of this figure with the man-faced ox-creature would suggest that it is double-formed rather than malformed and part of the second generation of hybrid apparitions, as opposed to the first generation where individual limbs wander, separated from bodies.⁵⁶

Sedley (2003b, 3) shows that it is likely that Empedocles was drawing from mythological hybrids in his account of the compound of creatures in the above fragments. Wright (1995, 213-14) gives mythological correlates for the compound creatures in fr. 66/61.⁵⁷ If we consider that Empedocles is drawing from mythology in his account of this

⁵⁴ e.g.: *Od.* 8.505, 18.174; *Il.* 2.797, 7.337; and later: *Opp. H.* 1.80.

⁵⁵ Despite this Sedley ‘guesses’ that the creatures have ‘dense’ bear paws for hands and the hind legs of oxen.

⁵⁶ Wright 1995, 295 also appears to interpret the εἰλίποδ' ἀκριτόχειρα and the βουγενῆ ἀνδρόπρωρα as referring to the same hybrid. This appears overly complicated with little justification. Sedley (2003b, 5 n. 13) however suggests that the compounds εἰλίποδα and ἀκριτόχειρα refer to two separate hybrids.

⁵⁷ Sedley (2003b, 3): ‘That the selective mechanism was common in the distant but recorded past was no doubt assured [for Empedocles] by the myths of now extinct creatures such as centaurs and chimaeras’. Gemelli (2003, 379) also notes the large size of the hybrids and the wandering limbs which preceded them (suggested by Aristotle *Gen. An.* 722b17 and also mentioned in the papyrus) and compares this to the archaic tradition, where large size was a one of the frequent characteristics of primordial beings and heroes.

phase in universal history, it is also worth comparing the ειλίποδ' ἀκριτόχειρα hybrids to depictions of similar creatures most often located in the mythological past in literary narratives. The existence of hybrid creatures with innumerable hands in the mythological tradition, such as the hundred-handers from the *Theogony*, strengthens the case for interpreting ἀκριτόχειρα as having countless hands as opposed to indistinguishable ones. Gemelli (1998, 108-10) also favours 'with innumerable hands' as does Inwood, who translates 'with a hundred hands'.

The figure is also said to be ειλίπους, which Inwood translates as 'with twisted feet'. Wright (1995, 295) instead translates ειλίπους as 'roll-walking' and referring to the 'shambling' movement of oxen; ειλίπους is frequently used as an epithet of oxen, especially in Homer and Hesiod, but also later.⁵⁸ It is also used as an epithet for women dancing or moving with a twisting gait,⁵⁹ and of a journey that involves many turns.⁶⁰ It thus appears to refer more readily to movement as opposed to form, so we might best translate ειλίπους in its Empedocles context as 'with twisting-feet'. The verb ειλέω 'to wind', 'turn round' or 'move to and fro' is sometimes used to describe the coiling of a snake.⁶¹ In Lucian's *Philopseudes* (22.18) the hair of Hecate takes the form of snakes which twist (ειλέω) around her neck and shoulders.⁶² She is also described as having snakes for feet (24.8-10).⁶³

⁵⁸ *Il* 6.424, 9.466, 15.547; *Theog.* 260, 983; *Op.* 795.

⁵⁹ Eupolis (Comic) fr. 161.3, Kol.5.3; Athenaeus *Deipn.* 7.26.7, 9.62.17

⁶⁰ Nonnus *Dion.* 1.60. Nonnus also uses it of a centaur stumbling about in his death throws (17.214) and as an epithet for Hephaestus (29.356), referring to his deformed feet and stumbling walk. Hephaestus normally has the epithet κυλλοποδίων.

⁶¹ Aratus in the *Phaenomena* (1.45-7) describes the constellation of Draco as twisting like a river: Τὰς δὲ δι' ἀμφοτέρας οἷη ποταμοῖο ἀπορρῶξ εἰλεῖται μέγα θαῦμα Δράκων, περί τ' ἀμφί τ' ἐαγῶς μυρίος: 'Between the two Bears, in the likeness of a river, winds a great wonder, the Dragon, writing around and about at enormous length' (ed. and tr. Kidd 1997). Hero of Alexandria, in the *Pneumatica* describes a machine where Herakles takes aim at a small tree περὶ ὃ δράκων εἰλεῖται, 'around which a snake is coiled'.

⁶² καὶ ἀντὶ τῆς κόμης τοὺς δράκοντας βοστρυχηδὸν καθεῖτο εἰλουμένους περὶ τὸν ἀχένα καὶ ἐπὶ τῶν ὤμων ἐνίους ἐσπειραμένους. 'Instead of hair, she had snakes flowing down in curls, twisting around her neck while some were coiling over her shoulders' (22.18).

Nonnus, in the *Dionysiaca*, gives the Giants the epithet δρακοντοκόμων ‘snake-haired’ (1.18) and calls them the χερσὶ διηκοσίησιν ἔλιξ λαὸς ἀρούρης ‘the coiling people of the earth with two hundred hands’.⁶⁴ Nonnus’ description of the Giants is also clearly comparable to the *Metamorphoses*, where they are described as *anguipedes* and having *centum brachia*.

If we interpret the Empedoclean εἰλίποδ' ἀκριτόχειρα hybrids as having countless hands and twisting or coiling feet, we have something very similar to the snake-footed and hundred-handed Giants in the *Metamorphoses* and *Tristia* 4.7.⁶⁵ The verbal closeness between Empedocles’ hybrid and the description of the Giants in the *Dionysiaca* as χερσὶ διηκοσίησιν ἔλιξ λαὸς ἀρούρης ‘the coiling people of the earth with two hundred hands’ further strengthens this argument, despite the *Dionysiaca* being significantly later. This opens up the possibility that Empedocles describes a hybrid creature which resembles a snake-footed, hundred-handed Giant, while also suggesting that Ovid in the *Metamorphoses* and *Tristia* 4.7 may be alluding to this particular Empedoclean hybrid as well. Much depends on how we interpret the figure from Empedocles to begin with; however, the proximity of the snake-footed Giant and hundred-hander in *Tristia* 4.7 to the half-bull man, which is without doubt an allusion to Empedocles, may strengthen this interpretation further.

3.6 *The Ophiotaurus and an Alternative Interpretation*

⁶³ Ἡ Ἑκάτη δὲ πατάξασα τῷ δρακοντείῳ ποδὶ τοῦδαφος ἐποίησεν χάσμα παμμέγεθες, ἠλίκων Ταρτάρειον τὸ βάθος· Hecate on beating the ground with her snake foot and made a vast chasm, as great as deep Tartarus (24.8-10).

⁶⁴ ἔλιξ is frequently used as an epithet for oxen alongside εἰλίπους, and is believed to refer to the twist in a bull’s horn (*Il* 12.293).

⁶⁵ We might also compare how the Giants in the *Dionysiaca* are described as pressing the stars with their many-ridged heads (25.93-94) to the *Metamorphoses*, where they prepare to lay their hundred hands upon the heavens (1.182-84).

Hybridity

Further evidence which suggests that Ovid is alluding to this Empedoclean compound creature may be seen in the *Fasti*, where Ovid depicts another strange hybrid which shares an affinity with the Giants, the Ophiotaurus, the snake-bull: *matre satus Terra, monstrum mirabile, taurus / parte sui serpens posteriore fuit* ‘there was a bull produced by its mother Earth, a wondrous portent, in its lower part it was a snake’ (*Fasti* 3.799-800). The Ophiotaurus appears to be only ever mentioned in the *Fasti*. Like the Giants the snaky element of this creature signifies its chthonic origin. There was an oracle that said that whoever burned the innards of the bull would be able to conquer the gods. The Titans sought to take advantage of this. Briareus, the hundred-hander sacrificed the bull but the entrails were snatched away by a Kite sent by Jupiter before Briareus could put them on the fire (*Fasti* 3.797-808).⁶⁶ It has been suggested that these events may have been part of the lost *Titanomachy*, while the only other depiction of an Ophiotaurus that we have is on a Roman mosaic recently excavated from York.⁶⁷



Figure 9: A Bull-Giant (possibly Brychon or Achelous) from the Pergamum Frieze

⁶⁶ Hannah (1997) discusses whether the kite (*miluus*) which Ovid mentions in the *Fasti* is the bird or a constellation.

⁶⁷ Details of the excavation can be found on the Northern Archaeological Associates website: < <http://northernarchaeologicalassociates.co.uk/profile/43-TG.htm> > (accessed 22.12.2014).

Hybridity

The Ophiotaurus shares some striking similarities with the depictions of the river Achelous. At *Met.* 8.881-82, Achelous recalls his own ability to transform his shape from a human to a snake to a bull, which he does when fighting Herakles. The fundamental difference between this representation of Achelous and the Ophiotaurus is that Achelous takes on these forms in sequence rather than embodying all three forms at once. Sophocles in the *Trachiniae* also describes the changing shape of Achelous again depicting his three different forms (9-14): the first a ταῦρος, ‘bull’; the second a αἰόλος δράκων ἐλικτός, ‘shifting, twisted snake’; and his final form, ἀνδρείῳ τύπῳ βούκρανος, ‘in human vessel, but ox-fronted’.⁶⁸

Michael Clarke (2004) in a detailed treatment of this passage compares Sophocles’ depiction of Achelous to the mixed up hybrid creatures of Empedocles’ zoogony, and in particular the ἀνδροφυῆ βούκρανα ‘ox-faced man creatures (fr. 66/61), who are coupled with the βουγενῆ ἀνδρόπρωρα ‘man-faced ox creatures’. ἐλικτός ‘twisted’ the adjective that Sophocles uses to describe Achelous when in his snake form, closely corresponds to the element εἰλί in Empedocles’ compound-adjective εἰλίπους ‘with twisting-feet’. If we were to follow Wright’s (1995, 295) interpretation which sees εἰλίποδ’ ἀκριτόχειρα as referring to βουγενῆ ἀνδρόπρωρα but maintained that εἰλίπους refers to this creature as having snakes for feet, then this creature starts to closely resemble Sophocles’ depiction of Achelous and indeed Ovid’s depiction of the Ophiotaurus.

The frieze from the Pergamum Altar may supply complementary evidence from the iconographic tradition, where there is possibly depicted a

⁶⁸ Strabo, who also quotes the passage from the *Trachiniae* explains the different shapes that Achelous takes correspond to different aspects of the river: being like a bull from the roaring waters, and also from the bending of the streams which are called horns; like a snake because of its length and windings; and with the front of an ox for the same reason as it was like a bull (*Geography* 10.2.19). Achelous is described as taking on the form of a bull in Diodorus Siculus (4.35.3) and Pseudo-Apollodorus (2.148). Philostratus the Younger, in *Imagines* 4, describes a painting of the struggle between Herakles and Achelous. Philostratus also describes the various forms that Achelous takes which are again closely modeled on the *Trachiniae*. Philostratus explains how the three different figures (the three different shapes of Achelous) in the painting are connected.

bull, humanoid, snake hybrid. It is likely that the Bull-Giant depicted on the frieze struggling with a figure, interpreted as Hephaistos, has snakes for legs (*Figure 9*); however, due to its fragmentary nature, we cannot be certain that the snake coil visible at the lower part of this figure belongs to him rather than another adjacent figure. Hansen (1971, 322) identifies this Giant as Typhon: ‘a huge giant, half as large again as the other figures, with serpent legs, and the neck, ears, horns, and tail of a bull’.⁶⁹ Ridgeway (2000, 36), however, likens the Bull-Giant to a ‘wilder Acheloos’ and says that he has been identified as Brychon, the bellower, a river at Pallene, an area in the Chalkidike peninsula, where the Giants were supposedly born.⁷⁰

Two different interpretations of Empedocles’ ειλίποδ' ἀκριτόχειρα have been presented here: the first suggests that it is a hybrid with countless hands and snakes for feet; the second suggests that it is half bull and half snake. Both cases suggest that Empedocles is drawing from depictions of hybrids in mythology in his account of the compound creatures, and both interpretations of this figure can be compared to hybrids described by Ovid. Given the wealth of other possible allusions to Empedocles in *Tristia* 4.7, the first interpretation is favored here. In both cases, however, we can observe how the depictions of such compound creatures occupy the border between science and mythology. If we follow the argument that Ovid is alluding to Empedocles’ compound creatures in *Tristia* 4.7, then we can also see Ovid’s remythologizing of Empedocles’ compound creatures, as Ovid returns them to their mythological setting.

3.7 Compounding Compound Creatures

The ειλίποδ' ἀκριτόχειρα compound creatures as well as the other hybrids from fr. 66/61 (above) demonstrate a frequent poetic technique employed by Empedocles, where he uses highly innovative bahuvrihi compound adjectives, often to portray compound creatures. David Sedley in his 2003 article *Lucretius and the New Empedocles*, sets out what he terms a ‘fingerprint test for Empedoclean imitations in Lucretius, namely the near

⁶⁹ Rupp (2006, 28) discusses further this identification of Typhon.

⁷⁰ Lycophron, in the *Alexandra*, describes Brychon as βούκερως ‘ox-horned’ (1407) and says that he served the Gigantes (1408).

juxtaposition of two or more compound adjectives'. Sedley states that the pairing of compound adjectives is a 'ubiquitous feature of Empedocles' poetry'; however, he shows that in Lucretius such pairings of compound adjectives are exceptionally rare and occur only in passages which Sedley interprets as 'imitations' of Empedocles. Thus the use of a number of compound adjectives in close succession in Latin poetry may be read as an attempt to replicate a feature of Greek verse and Empedocles in particular, at least at the time of Lucretius.⁷¹ Sedley's argument is largely based on the fact that compound adjectives do not lend themselves easily to Latin verse and would be jarring enough for the reader, especially when appearing in close proximity, to function as indicators of a deliberate attempt by the poet to imitate in Latin a feature of Greek poetry and in particular a technique frequently used by Empedocles.⁷²

Garani (2013, 240) applies Sedley's fingerprint test to a passage from the *Fasti* (1.383-84): *quid tuti superest, animam cum ponat in aris / lanigerumque pecus ruricolaeque boves?* 'what creature remains safe when even the wool-bearing sheep and the earth-ploughing oxen lay down their soul on the altars?'. Here Ovid, echoing the speech of Pythagoras in *Met.* 15 and Empedocles, criticises the practice of animal sacrifice based upon metempsychosis. This passage has also been identified as an allusion to *DRN* 5.864-67, where the compound adjective *laniger* also appears along with *levisomna*, where Lucretius describes how domesticated animals have been entrusted to the care of humans. Sedley identifies this passage from the

⁷¹ Quintilian in the *Institutio Oratio* (1.5.67) discusses the use of compounds in Latin; in particular he notes the unpleasing effect of compound adjectives such as used by Pacuvius, in the line *Nerei repandirostrum incurvicervicum pecus* 'the flock of Nereus snout-uplifted, neck-inarched'. Quintilian adds that such compounds are better suited to Greek than to Latin (1.5.70).

⁷² Sedley (2003, 6-7), as an example, compares the following use of compound adjectives at *DRN* 2.1081-83 with Empedocles: *invenies sic montivagum genus esse ferarum, / sic hominum geminam prolem, sic denique mutas / squamigerum pecudes et corpora cuncta volantum*. Both *montivagus* 'mountain-wandering' and *squamiger* 'scale-bearing' are modelled on the typical Empedoclean formula with *montivagus* translating the Empedoclean ὀρίπλαγκτος.

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DRN as ‘imitating’ Empedocles, and Garani argues that, in the *Fasti*, Ovid is constructing a double-allusion to Empedocles and Lucretius. If Sedley’s method and Garani’s application of it are correct, then by extension we may be able to cautiously apply Sedley’s fingerprint test to Ovid as well as Lucretius.⁷³

It is worth displaying again the passage from *Tristia* 4.7 describing the hybrids, where a number of compound adjectives also occur in quick succession (15-18):

quadrupesque hominis cum pectore pectora iunctos,
tergeminumque virum tergeminumque canem,
Sphingaque et Harpyias serpentipedesque Gigantas,
centimanumque Gyen semibovemque virum.

Ovid uses six compound adjectives in the space of four lines (with one being repeated). If Sedley’s ‘fingerprint test’ holds any weight then the profusion of compounds in Ovid’s depiction of the hybrids arguably look to Empedocles (66/61): the *semibovem virum* and possibly also *quadrupes*⁷⁴ alluding to the βουγενῆ ἀνδρόπρωρα and ἀνδροφυῆ βούκρανα; the *tergeminum virum*⁷⁵ alluding to the πολλά μὲν ἀμφιπρόσωπα καὶ

⁷³ We might also consider Vergil’s use of *centumgeminus* to describe Briareus at *Aen.* 6.287 (§2.3 above) as another example of the use of a bahuvrihi compound in a similar context.

⁷⁴ Lucretius uses the compound adjectives *quadrupes* and *anguimanus* when describing the elephants at *DRN* 1.536-37 (§3.4 above). This could be another example of the collocation of compound adjectives indicating an allusion to Empedocles. When Lucretius uses the compound adjective *anguimanus*, the elephants are referred to as *boves lucae* ‘Lucanian cattle’. Immediately following this Lucretius states that *discordia tristis* ‘grim strife’ brought forth one thing after another to terrify humans during armed conflict (5.1305-7). That the elephant is considered a product of *discordia* further indicates the connection with Empedocles. Gee (2013, 53-55) discusses the personification of *discordia* in this passage. Lucretius at *DRN* 5.788-91 describes how the hair and bristles are created from the limbs *quadripedum* ‘of four-footed’ creatures. Sedley (2003b, 9) considers whether this is an Empedoclean echo.

⁷⁵ *Geminus* ‘twin-born’ is already a type of double word. Lucretius uses it at *DRN* 2.1082 (*hominam geminam*) to translate the Empedoclean phrase ἀ[νθρώ]πων δίδυμον φύμα. See

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ἀμφίστερνα; and finally the *serpentipedes Gigantes* and the *centimanum Gyen* potentially alluding to the εἰλίποδ' ἀκριτόχειρα. While most of the compound adjectives used by Ovid here conform to the relatively normal construction of using a numerical prefix, *serpentipes*, however, would definitely fall into the category of the innovative bahuvrihi compounds, which we frequently find in Empedocles.⁷⁶ Ovid also pairs each compound adjective to a compound creature in a very similar fashion to Empedocles.

CONCLUSION

If the above holds good, we may also see here another replication in the language of the discourse of the text's subject matter. The deployment of characteristically Empedoclean compounds mirrors the bizarre compound creatures themselves. This should not detract from our identification of the creatures in *Tristia* 4.7 as mythological characters and the series of allusions which we identified in the opening section. Rather, it may be argued that Ovid is constructing a series of allusions which function to reincorporate the compound creatures of Empedocles to their mythological setting. This is emphasised by the ability of the hybrids to straddle the boundary between mythological and scientific discourse.

This chapter has also attempted to implicitly argue that Ovid's depiction of hybridity, particularly in *Tristia* 4.7, can be read both in terms of corporeal form and textual allusion, as the hybrid creatures constructed from a blend of incongruent limbs mirror the composition of the text from a variety of different sources and genres. It has also shown that hybridity can be an indication of the latent chaos still present in the formed universe, as the hybrids question and undermine the stability of corporeal form. In

Sedley's argument in note above. *Geminus* is also a frequent epithet of Janus (Pliny *Nat.* 33.45.1).

⁷⁶ Kenney (2002, 62-64) lists the various compound adjectives used by Ovid, including a number of examples which appear to be Ovidian coinages. He states that Ovid's 'innovations' tend to conform to types already well established in poetic usage, with a predominance of verbal suffixes in *-cola*, *-gena*, *-ficus*, *-fer*, etc. and numerical prefixes in *bi-*, *tri-*, *centi-*, *multi-*, *semi-*, etc. He adds that formations on the model of *anguicomus*, *anguipes*, *flexipes*, etc. are in a small minority.

alluding to *DRN* 5 and Empedocles in particular, Ovid illustrates how these creatures are generally seen to be remnants of a primeval phase of scientific universal history brought forward into much less remote pseudo-mythological past of historic time. The snake-footed Giants from *Metamorphoses* 1 demonstrate an active attempt to overthrow the ruling world order, and through their defiance of spatial boundaries, attempt to plunge the universe back into a state of *chaos*. This attempt to instigate universal retrogression is mirrored in their corporeal form, as being a combination of disparate limbs, they may be read as a bodily expression of *chaos*. The extended study of the snake-footed Giants in the second half of this chapter has also attempted to see how far we can stretch the net of textual allusions and indeed if the *Metamorphoses* can be used to shed light on these obscure figures almost lost to surviving literature prior to Ovid. Their shifting iconographic representation seems somewhat fitting for the slipperiness of their corporeal form and the difficulty of establishing their traces in the surviving literary tradition. Finally the pairing of compound adjectives with compound creatures provides an excellent example of the mirroring of the form and content of the text. This is also incorporated into Ovid's allusive activity, as Ovid uses the pairing of compound adjectives and compound creatures to allude to the hybrids of Empedocles.

EXCURSUS 6: AN ILLUSTRATION OF SNAKE-FOOTED GIANTS IN
NICANDER'S *THERIACA*

Nicander in the *Theriaca* gives an account of venomous creatures, including snakes. At the beginning of the poem he recalls how spiders, reptiles, snakes and ἄχθεια μύρια γαίης 'the countless burdens of the earth' were born from the blood of the Titans (*Theriaca* 9-10), citing Hesiod as his source.⁷⁷ In the

⁷⁷ Overduin notes a connection between *Theriaca* 9: ἄχθεια μύρια γαίης 'the countless burdens of the earth' and the phrase ἔθνεα μύρια θνητῶν 'the countless tribes of mortals' from Empedocles which occurs twice in *Fragment* 61/35, at line 7 and again at line 16 when Empedocles describes the origin of living creatures pouring from the earth. Overduin (2014, 182): 'Although the verbal echo is faint, it is striking that we find a similar line-end in one of Nicander's predecessors within the genre of didactic poetry, in particular where we are also told how earth's first creatures came into being'.

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Theogony, it is the Giants and Erinyes that are born from the blood of the castrated Ouranos (185). Overduin (2014, 184) states that among Hellenistic poets the story of snakes being born from the noxious blood of a primeval being is well known from Apollonius. Overduin points to *Argonautica* 4.15.13 where snakes are born from the blood which falls from the severed head of Medusa. Ovid gives a similar account at *Met.* 4.618-19: *Gorgonei capitis guttae cecidere cruentae; | quas humus exceptas varios animavit in angues* ‘drops of blood from the Gorgon’s head fell down, which the ground received and breathed life into as various snakes’.

The principal MS of Nicander’s *Theriaca* is a 10th century Byzantine manuscript believed to be a copy of a Late Antique book.⁷⁸ The manuscript contains an illustration which is apparently meant to depict the birth of the snakes from the blood of the Titans. The illustration depicts 9 snake-footed Giants, writing in agony, 3 of whom are carried away by what looks like a flood (*Figure 10*). These Giants follow the typical iconographic formula for representing the Giants, which we have seen above, most notably in the Pergamum frieze. It is difficult to resolve how this scene can be an illustration of Nicander’s *Theriaca*. There are of course a common set of themes with the generation of snakes from the blood of the Titans; however, Nicander does not describe the Giants, or indeed their destruction. John Malalas in the *Chronographia*, gives the flood as one possibility for the Giants’ destruction (§3.4 above).

In the *Metamorphoses* (1.155-61), after the Giants are defeated and the lands are drenched with their blood, Earth turned their blood into the appearance of humans (*facies hominum*); this generation of humans renowned for their violence is subsequently destroyed by the flood. It is possible that the illustration from the *Theriaca* manuscript conflates the destruction of the snake-footed Giants with the destruction of the humans which arose from their blood as told in the *Metamorphoses*; or in the subsequent tradition a story developed whereby the Giants were destroyed by a flood; or indeed, given that the illustration appears in manuscript of the

⁷⁸ The image is accessible in the accompanying exhibition catalogue to Weitzmann’s *Age of Spirituality*.

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Theriaca, this depicts an earlier account of snake-footed Giants and their destruction. The illustration, once more emphasizes the fluidity present in the iconographic and literary traditions dealing with hybridity, and human and beastly origins.



Figure 10: Snake-footed Giants destroyed by flood in 10th Century ms. of Nicander's Theriaca believed to be a copy of a Late Antique book

Conclusion

1. INTRODUCING HERMAPHRODITUS AGAIN

We have seen in the previous chapter, how the hybrids in *Tristia* 4.7 are associated with a primeval phase in the history of the universe as described in philosophical and scientific literature. We have also examined how Ovid's depiction of Hermaphroditus is associated with Lucretius' *portenta* and the compound creatures of Empedocles; however, given that the story of Hermaphroditus takes place in book 4 of the *Metamorphoses*, long after the formation of the universe and the regeneration of living beings, it may also be seen as an example of how a character normally associated with scientific primeval history can be found in the pseudo-historical context of mythological time. It also demonstrates how the concerns of erotic desire, which dominate the *Metamorphoses* following universal formation, intersect with the scientific account of cosmic and corporeal development. We have argued throughout this work that the elemental mixing which takes place in the formation of the universe and the creation of living beings instils a fundamental mutability in the very structure of corporeal form. As an account of physical metamorphosis which involves the mixing of disparate elements in a character associated with creatures from the primordial history of the universe, the story of Hermaphroditus seems a fitting example with which to finish this work.

In Ovid's depiction of the primordial universe, basic oppositions such as the elemental qualities of hot and cold, and dry and wet are confounded with each other and there is no fixed or stable identity (*Met.* 1.5-20). In merging the opposition of male and female in the body of Hermaphroditus, Ovid implicitly refers to this phase in the formation of the universe. We have seen how Ovid describes the body of Salmacis and Hermaphroditus after they have been blended into one as follows: *nec duo sunt sed forma duplex, nec femina dici / nec puer ut possit, neutrumque et utrumque uidentur* 'they were not two but a double shape, that could be said to be neither woman nor boy, they seemed to be neither and both' (*Met.*

Conclusion

4.378-79). It has been argued that these lines contain an allusion to book 5 of Lucretius' *De Rerum Natura* and his description of the *portenta*, the monstrous creatures, which were produced from the earth at an early stage in the history of the universe (*DRN* 5.837-48). Both Ovid and Lucretius describe how the first living creatures are created from the earth through a mixture of the elements, which involves the confounding of basic elemental oppositions. We have also compared Lucretius' *portenta* and Ovid's Hermaphroditus with Empedocles' depiction of the 'dream-like' creatures with double-form, which he describes arising from the earth at a similar phase in the history of the universe: μεμειγμένα τῆι μὲν ἀπ' ἀνδρῶν τῆι δὲ γυναικοφυῖ σκιεροῖς ἠσκημένα γυίοις 'mixed in one way from men and in another way in female form, outfitted with shadowy limbs' (fr. Inwood 66 / DK 61). Ovid's depiction of Hermaphroditus was shown to be a likely double-allusion both to this passage from Empedocles and to the *portenta* from *DRN* 5.

Ovid's allusions to Lucretius' description of the *portenta* and Empedocles' compound creatures clearly link Hermaphroditus with this early stage in the evolution of living beings. The story of Hermaphroditus in the *Metamorphoses* may be seen as indicating a reverse in the sequence of corporeal development and a return to an earlier stage in the history of the universe. Pursuing this line of analysis a further possible intertext presents itself, namely the speech of Aristophanes from Plato's *Symposium*, where Aristophanes describes how the early generations of humans had double forms with two faces, and were divided into three sexes, male, female and hermaphrodite:

ἔπειτα ὅλον ἦν ἐκάστου τοῦ ἀνθρώπου τὸ εἶδος στρογγύλον, νῶτον καὶ πλευρὰς κύκλῳ ἔχον, χεῖρας δὲ τέτταρας εἶχε, καὶ σκέλη τὰ ἴσα ταῖς χερσίν, καὶ πρόσωπα δὴ ἐπ' ἀνὸς κυκλοτερεῖ, ὅμοια πάντη· κεφαλὴν δ' ἐπ' ἀμφοτέροις τοῖς προσώποις ἐναντίοις κειμένοις μίαν, καὶ ὄτα τέτταρα, καὶ αἰδοῖα δύο, καὶ τᾶλλα πάντα ὡς ἀπὸ τούτων ἄν τις εἰκάσειεν. ἐπορεύετο δὲ καὶ ὀρθὸν ὥσπερ νῦν, ὁποτέρωσε βουλευθείη·

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Again, the form of each human being as a whole was round, with back and sides forming a circle, but it had four arms and an equal number of legs, and two face exactly alike on a cylindrical neck: there was a single head for both faces, which faced in opposite directions, and four ears and two sets of pudenda, and one can imagine all the rest from this' (189e5-190a5, tr. Allen 1993).

Aristophanes describes how these early humans had double the amount of limbs compared to the humans of today and resembled the shape of a disk. Aristophanes then describes how these early humans attempted to overthrow the heavens and Zeus punished them by splitting them in two (190c-d).¹ Aristophanes uses this to explain the origins of love and the different sexual orientations, as each modern human searches for his or her lost half from which he or she has been separated.

There are clear differences between Aristophanes' description of the multi-limbed early ancestors of humans and Ovid's post-transformation description of the body of Hermaphroditus; however, the desire of Salmacis to be wholly united with her beloved and for her body to be incorporated and combined with his suggests Aristophanes' explanation of love as the desire to be reunited with the lost half of your former self. Ovid's account of Hermaphroditus, like that of Aristophanes, contains aspects of both scientific accounts of human evolution while also illustrating the depths of erotic desire and the need to be wholly joined with the body of one's beloved. Hermaphroditus may be seen as a liminal figure associated with an intermediary phase in both universal history and the development of the human body, while speaking simultaneously to Ovid's account of the formation of the universe and the stories of bodily metamorphosis. The connections between the above set of intertexts are treated at large in a forthcoming article (Kelly 2017).

¹ The early ancestors of humans are compared in this passage (190c) to the Giants, who were destroyed by Zeus with thunder bolts.

2. CONCLUSIONS

2.1 Recap

The opening chapter of this work demonstrated how, from the very outset of the *Metamorphoses*, Ovid sets up a direct parallel between the form and content of his work. Through an analysis of the dislocated word-order of the poem, it showed how Ovid uses the dynamic of reading-as-rearrangement to display the first transformation of the *Metamorphoses* using the text's linguistic structure. It discussed how this form of reading-as-rearrangement had its origin in the rhetorical trope of metathesis as described by Philodemus and Dionysius of Halicarnassus. It also argued that the dislocated word-order of the poem was directly comparable to Lucretius' alphabet analogy. Both Lucretius and Ovid utilize a similar dynamic involving the rearrangement of linguistic structure as a means of affecting and displaying physical transformation. This chapter also demonstrated that the analogy comparing the composition of the text from letters, words and sentences to the composition of the universe from atoms, compounds and elements could also be found in numerous philosophical discourses. The analogy was discussed in fragments from the Atomists, Plato's *Theaetetus* and *Timaeus*, as well as Cicero's *De Natura Deorum* and was shown to be utilised to demonstrate both the Epicurean notion of the anti-teleological universe as well as the Stoic universe of divine design. In particular the use of the analogy in the *De Natura Deorum* directly aligns the poet as creator of the text with the demiurge as generator of the universe.

The second chapter largely followed on from the first and discussed how both Ovid and Lucretius use imagery from weaving and spinning to further elucidate the structure of matter and the formation of the cosmos. The image of the raw clump of wool held on the distaff was compared to the chaotic state of the primordial universe. The drawing down of threads from the clump of wool was compared to how Ovid describes the elements first being distinguished from each other at the very beginning of the universe's formation; while the image of the threads being subsequently woven into a fabric was compared to how the elements likewise had to be organized and placed in their correct position in order to form a stable universe. This

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chapter also suggested that Ovid's use of *deducere* may be read as an intertextual marker drawing from the Callimachean tradition, linking the allusive activity of the poet to the demiurge's creation of the universe.

The third chapter examined Ovid's depiction of the primordial universe and sought to trace the numerous allusions to other texts in his depiction of *chaos*. It analysed how Ovid describes the elemental warring which took place in primordial *chaos* and it argued that Ovid's numerous allusions to multiple and conflicting sources implicitly suggest the image of the blending and warring of elemental opposites which took place in primordial *chaos*. This chapter also demonstrated how Ovid's depiction of *chaos* and the early stages in the formation of the universe integrate material from numerous sources, often deliberately mixing Stoic philosophy and Lucretian physics. It also illustrated Ovid's strategy of continually shifting back and forth between mythological narrative and philosophical discourse and how this was further employed to display transformation within the text, while potentially undermining its genre and the status of its own discourse.

The fourth chapter, following on from the third, examined Ovid's depiction of the primordial universe particularly in relation to the cosmogony of Plato's *Timaeus*. It argued that the *Timaeus* provides an antecedent for both Ovid's cosmogony and the parallel between textual and universal formation. This chapter attempted to trace the most likely avenue by which Ovid encountered material from the *Timaeus*. It considered its influence from a number of different perspectives, including Cicero's translation of the *Timaeus*, Balbus' Stoic adaptation of material from the *Timaeus* in the *De Natura Deorum*, as well as analysing how the *Timaeus* intersected with the Pythagorean and Neopythagorean traditions. It attempted to illustrate the complexity of Augustan Rome's philosophical inheritance and how this impacted on Ovid's cosmogony. It also compared the figure of the *opifex rerum* from the *Metamorphoses* with the demiurge of the *Timaeus* and compared the εἰκὼς μῦθος of the *Timaeus* to the textually complex universe portrayed in the *Metamorphoses*.

The fifth chapter examined the parallel universe described in the *Fasti* and how this related to the cosmogony of the *Metamorphoses*. It

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analysed how the body of Janus may be read as a corporeal and spherical realization of the primordial cosmos and how this was further linked to the representation of the world in the *Timaeus* as perfectly spherical (σφαιροειδές) and a living body (ζῷον). It also analysed a series of allusions to the Empedoclean universe and how this emphasizes the notion of continual change and cyclical recurrence in cosmic formation. It was also suggested that this could be read in terms of textual allusion as Ovid deliberately contrasts his accounts of universal formation in the *Fasti* and the *Metamorphoses*, ultimately portraying parallel universes in parallel texts. It also considered how Ovid's description of the armillary sphere of Archimedes provided a further model with which to view the structure of the world. It argued that Ovid's use of an actual model for the heavens further problematized the relationship between the universes described in the *Metamorphoses* and the *Fasti* and how they relate to physical reality. The idea of the model cosmos was also analysed in relation to the εἰκὼς μῦθος of the *Timaeus*.

The sixth chapter examined Ovid's depiction of anthropogony and zoogony in *Metamorphoses* 1, both after the creation of the universe and in the regeneration of life after the flood. It focused on the composition of humans and animals from a mixture of the elements and how this served to align them with the material structure of the primordial universe. It illustrated how Ovid appropriates imagery from both mythological narrative and philosophic and scientific discourses, by having Prometheus fashion humans from a mixture of the four elements. It also analysed Ovid's depiction of the regeneration of life after the flood in relation to scientific accounts of spontaneous generation. In particular it argued that Ovid constructs a complex series of allusion to Lucretius and Empedocles and their descriptions of the formation of life in the early history of the world. It also considered a series of structural parallels between Diodorus Siculus' *Bibliotheca Historica* and the *Metamorphoses* and discussed how these two texts might be related. It suggested that the *Bibliotheca* provided a model for the sequence of universal formation in the *Metamorphoses* as emphasised by Diodorus' account of spontaneous generation. It proposed that the

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Bibliotheca could have provided a basic outline for Ovid's cosmogony. By examining the *Metamorphoses* next to the *Bibliotheca*, it also examined how Ovid integrates various aspects from the genre of universal history.

The final chapter examined Ovid's catalogue of hybrids from *Tristia* 4.7. These hybrid creatures were identified with Lucretius' *portenta* as well as the compound creatures of Empedocles and were shown to generate a further set of allusions linking the hybrid creatures from both *Tristia* 4.7 and the *Metamorphoses* to scientific accounts of the strange corporeal forms which existed during the early phases in the evolution of living beings. This provided a further example of Ovid mixing different aspects of mythological narrative and scientific discourse. This chapter also attempted to trace the origin of Ovid's most obscure hybrid, the snake-footed Giants, through examining both literary and visual representations of this creature. It argued that this hybrid could be identified with one of the compound creatures described by Empedocles and this could be used as evidence for a reinterpretation of Empedocles' εἰλίποδ' ἄκρικόχειρα hybrids. Finally this chapter provided a further example of Ovid constructing a parallel between the form and content of the text. It illustrated how Ovid's use of compound adjectives to describe the compound creatures may be read as illustrating anthropomorphic form using the linguistic structure of the text. It also argued, following David Sedley's theory of the 'Empedoclean footprint', that this linguistic feature could be seen as indicating a stylistic affinity between Ovid's hybrids and the compound creatures of Empedocles. This final example shows how Ovid uses the text to display transformation using both its linguistic structure and the mode of allusion.

We have examined how Ovid depicts the formation of the universe in the *Metamorphoses* and we have argued at various points in this study that Ovid sets up a direct parallel between the form and content of the text. This collapses into the concept that Ovid instils both the universe and the text with mutually reinforcing levels of mutability and change. The composition of the universe from a set of continually altering elemental constituents mirrors how the text is likewise comprised of multiple allusions to different texts and discourses. The composition of the human body from a

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mixture of the elements shows how mutability is instilled in the structure of corporeal form. This allows for a scientific explanation of the individual accounts of metamorphosis which will occupy the remainder of Ovid's text and illustrates how the transformation of bodily forms is grounded in the notion that matter itself on an atomic level is likewise characterised by the fundamental mutability of its constituents. Correspondingly, it has been argued that Ovid uses the text to illustrate how corporeal mutability is related to the structure of matter. He achieves this first by showing how the transposition of letters and words can alter not only the structure of a sentence but the meaning which it conveys, and second by showing how the integration of allusions from different texts encourages us to reconceptualize our overriding image of what the *Metamorphoses* is and what genre or discourse it pertains to. Throughout we have proposed that Ovid uses these ideas to problematize how we view the nature of the text and its relationship to the universe which it describes.

This work has argued that Ovid's careful reception of previous literature is equally applied to philosophical and scientific discourses. In building upon the work of Damien Nelis and Philip Hardie, it has attempted to further understand the influence of Lucretius and Empedocles on Ovid's conception of the cosmos and the structure of matter. Important here is the possible significance of Plato's *Timaeus*, and the discourses which stemmed from it, on understanding the different strains of philosophical thought running throughout the beginning of the *Metamorphoses*. The *Timaeus* provides an antecedent both for Ovid's cosmogony, as well as for the way in which Ovid problematizes the relationship between the text and the universe which it describes. In particular the notion of the εἰκὼς μῦθος has provided a model with which to view Ovid's world of personified deities and abstract scientific processes. The foregrounding of Greek philosophical literature and Plato in particular has provided a means with which to interrogate how we define myth versus philosophy and how undermining this apparent dichotomy was a primary concern in Ovid's representation of the universe.

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2.2 Further Research

This work has argued that the *Timaeus* exerted a significant influence on Ovid's depiction of cosmogony. Other Platonic texts, however, have only been touched upon briefly in this work. Our reappraisal of the impact of philosophical and scientific literature on the beginning of the *Metamorphoses* should prompt the examination of further comparisons between Platonic material and the Ovidian corpus. The cosmogonic accounts of Aristotle and in particular the *De Caelo* have not garnered sufficient attention in this work and may provide a further avenue for future research. Much work is also still to be done on fully gauging the impact of Neopythagoreanism on Augustan Rome. Further investigation is also needed into examining the impact of writers such as Philodemus and Dionysius of Halicarnassus from the field of literary criticism, on Ovid's conception of poetics. There have been a number of works which have examined the influence of writers such as Philodemus on Horace; however, how this translates and impacts the other Augustan poets and Ovid in particular needs much further study.

This work has continually cast its gaze back upon texts which exerted an influence on the *Metamorphoses*. One of the fundamental tenets of intertextuality is that it looks forward as well as back, and that it shows how a later text can exert its influence over an earlier one. This work has generally limited itself to the examination of Ovidian texts and texts prior to Ovid; however the immediate impact of the *Metamorphoses* on subsequent literature may be briefly seen in a number of the excursus, which are dotted throughout this work. These also indicate further avenues in which this research may be extended. In particular much work is needed on further exploring the connections between the *Metamorphoses* and Manilius, and the intertextual complexity of the universe presented in the *Astronomica*; similarly, a number of the ideas dealt with in this work, such as the poet's allusive activity and the switching between modes of discourse, also feature prominently in works associated with the Second Sophistic. For instance how Ovid influenced Philostratus and his *Imagines* likewise needs much further research.

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2.3 Final Conclusions

One of the main goals of this work has been to open up the range of possible texts that Ovid may have been alluding to and influenced by, and to see what happens when we place the *Metamorphoses* alongside texts from various discourses, genres and traditions. In this sense this work may be seen as a series of hypotheses, which have attempted to trace how one text connects to another and how accurately we can reconstruct the chain of textual connections imbedded within Ovid's narrative. Yet, more so, this methodology has frequently been used to show how when we study the *Metamorphoses* in relation to its sources, we come closer to understanding Ovid's conception of the text and its subject matter. The danger with such an approach is that it always leaves itself open to the question of why comparisons with one text have been made over another; however, if this work sparks such reactions then it will have made its contribution to opening up the field of Ovidian studies to considering the possibility of comparing the *Metamorphoses* to texts from different genres and discourses.

It is easier, in a sense, to illustrate how Ovid's use of specific linguistic features, such as compound adjectives and the transposition of words can mirror various aspects of the subject matter of the text. It is more difficult, however, to argue that Ovid's allusive activity is likewise designed to display transformation using the text, as it can rely on the suspension of judgement when considering individual instances of allusion. However, the culmination of evidence presented throughout this work linking textual allusion with universal formation and physical metamorphosis should be sufficient for us to argue that Ovid's allusive activity was not only part of his awareness of the nature of the text, but was used to illustrate fundamental ideas about the structure and substance of the cosmos. It is when we examine Ovid's depiction of the cosmos through analysing the structural composition of the *Metamorphoses* from the form of individual words to our changing perspective of its genre that we obtain an image of his vision for a metatextual universe.

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